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ABSTRACT

This workbook describes the Leadership for Excellence (LFE) professional-development program and provides workshop materials for three sessions. LFE is a long-range, systematic professional-development program designed for school administrators. Developed by the Northwest Regional Educational Laboratory, its focus is on actions for increasing school effectiveness. The program is comprised of five content strands--vision building, improving the school climate, improving instruction, implementing curriculum, and monitoring school progress. This workbook presents materials for three sessions that focus on curriculum development. It contains descriptions of group activities, handouts, and transparencies. The program is research based, has clear goals and operational objectives, builds on prior experiences and is related to the school situation, focuses on the leader who engages the entire staff, promotes collaboration among colleagues, and utilizes the experience of school practitioners. (LMI)

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Leadership for Excellence

CURRICULUM IMPLEMENTATION

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1990

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School Improvement Program

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Questions and answers about LFE . . .

What is it?
Is it for you?

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This introduction is designed to give you information about the LEADERSHIP FOR EXCELLENCE (LFE) program developed by the Northwest Regional Educational Laboratory. As you read through the following questions and answers, you will have a better understanding about:

- The content of the LFE program
- How LFE meets the criteria for effective staff development
- How you would benefit from participating in the program

I. INTRODUCTION

Q. WHAT IS LEADERSHIP FOR EXCELLENCE?

A. Leadership for Excellence (LFE) is a long-range, systematic professional development program designed for school administrators. The primary focus is on actions that school administrators can take to make their schools more effective.

Q. HOW WAS LFE DEVELOPED?

A. NWREL staff reviewed the research literature on effective schools to determine what successful principals do to make their schools a better place for all children to learn. From this knowledge base, five areas of study were identified, and the initial workshop materials were developed for review. The workshops were then piloted with a small group of administrators, who gave feedback on the content and processes presented.

In the school year 1987-88 the revised program was field tested with approximately fifty members of the Institute for the Advancement of Leadership. The Institute is part of Oregon's Project Leadership program sponsored by the Confederation of Oregon School Administrators. The participants in the field test provided feedback through formal evaluation processes which led to further enhancements of the LFE program.

II. LEADERSHIP FOR EXCELLENCE STRAND CONTENT

Q. WHAT ARE THE AREAS OF STUDY IN THE LFE PROGRAM?

A. The five content strands in LFE are Vision Building, School Culture/Climate, Improving Instruction, Curriculum Implementation , and Monitoring School Progress.

Q. WHAT KNOWLEDGE AND SKILLS ARE DEVELOPED IN EACH CONTENT STRAND?

A. The following descriptions indicate the types of activities that occur in the five strands.

THE LFE STRAND CONTENT

1. Vision Building

Effective instructional leaders portray learning as the most important reason for being in school. These leaders have a clear understanding of the school's mission and work to develop a clear vision of where their schools are going. Examination of developing trends and cutting-edge thinking helps to create a vision for the future.

Participants in the Vision Building strand begin by carefully examining and clarifying their own personal values, beliefs and expectations about the purposes of education. They engage their entire staffs in a similar process of developing a shared vision for the future of their schools. In the last workshop, participants learn and use techniques for communicating the vision by both formal and informal means.

The vision statement and guiding beliefs provide a framework that helps in determining priorities and in making decisions that can unify the staff's focus on instructional issues. The participants identify actions for building the kind of commitment that motivates and invigorates the staff, students, parents and community toward the common purpose of creating schools that foster success.

2. School Culture/Climate

Effective school leaders know what culture and climate characteristics need to be present in schools in order for students to learn successfully, and they consciously work to create these characteristics in their own schools. In this strand, participants learn about school culture and climate factors and the differences between them in more and less effective schools.

Participants review a variety of tools and approaches for assessing school culture and climate, and they gain practical experience by conducting an assessment in their own schools. With the results of assessment efforts in hand, participants learn cooperative decision-making strategies, engage their staff in evaluating the current school culture and climate, and reach consensus on one or two areas of culture or climate to improve in their schools. The final workshop is devoted to reviewing research on change and implementation of innovations.

Participants learn planning methods that help them to implement selected culture and climate characteristics--characteristics that have high potential for improving learning success for students and improving working conditions and relationships among staff.

3. Improving Instruction

Research on effective teaching reveals the practices that make a difference in student's learning success. Findings from this research are strong and consistent. Effective school leaders know the research and engage their staff in using it to improve teaching in their schools. Participants in this strand learn how to use collegial learning, peer assistance and schoolwide staff development practices to engage their staffs in activities aimed at improving instruction.

The first workshop is devoted to establishing a common language to describe effective teaching and a framework for using research to improve instruction in the school. The second workshop introduces procedures for using video as a tool for improving instruction. The final session introduces staff development techniques, including peer assistance, that have been shown to lead to improvements in teaching behavior.

Throughout the year, participants apply the concepts and practices learned in the workshops to their instructional improvement work. The theme of this strand is "improving teaching together," and participants leave with a firm understanding of how to bring people together to improve teaching and learning.

4. Curriculum Implementation

In effective schools, principals are responsible for, and active in, managing the curriculum alignment process. Setting high expectations for curriculum quality through the use of standards and guidelines is a task of great importance for instructional leaders. When objectives, resources, instructional strategies and assessments are in close alignment, students learn the curriculum better.

In the first workshop, participants examine the components of a comprehensive curriculum improvement cycle and determine their role in the process. Participants work with their staffs at and across grade levels and departments to clearly define priority objectives and instructional timelines. After the last session, participants know how to develop a carefully planned monitoring system that will assess student achievement in the various program areas and evaluate the extent to which teachers are implementing the written curriculum.

5. Monitoring School Progress

Instructional leaders in effective schools check students' progress frequently, relying on explicit performance data. The results are made visible, and progress standards are set and used as points of comparison.

In the first session, participants identify indicators and procedures for monitoring schoolwide performance. At the building level, the principal works with the staff to create guidelines for the use of data on student outcomes, noting advantages and disadvantages and any precautions that must be taken. The second workshop focuses on collecting and displaying information in a school profile. The focus is student performance, which includes achievement, social behavior, and attitude data which are set in a context described by local demographic information. The third workshop shows how staff analysis of this database provides information for use in setting school goals through consensus-building activities. In addition, participants create plans for systematically examining staff use of effective schooling practices.

The process of identifying and agreeing upon these critical components establishes a common base of understanding for the improvement of student outcomes.

III. CRITERIA FOR EFFECTIVE STAFF DEVELOPMENT

Think for a minute about the learning activities in which you have engaged that have been most successful in changing the way you work. What were some of the characteristics of classes, workshops, or conferences that have made a difference for you? As you think about these things, read the following questions and answers to see if LFE meets the criteria for effective staff development.

Q. WHAT ARE THE ESSENTIALS FOR EFFECTIVE PROFESSIONAL GROWTH?

A. Research tells us that the essentials of professional growth are autonomy, time, and collaboration.

Q. HOW DOES LFE PROVIDE AUTONOMY?

A. Autonomy has to do with having both choices and independence. First, you are able to choose in which of the five strands you wish to participate. And you are the one who determines how to apply the concepts and skills in your own setting.

Your independence as a learner makes it possible for you to build from a personal base of experience and to explore and test alternatives, ideas and methods for improving your school. In this program you are responsible for your own growth and feeling of power over your own learning. You are also responsible to yourself and to fellow participants to experiment and share results.

Q. HOW DOES TIME AFFECT PROFESSIONAL GROWTH?

A. Research shows that, for adult learners, short episodes (approximately four hours) are the best for maintaining a good learning environment. Complex learning requires that learning episodes be spread over time, with opportunity for application and feedback before new learning takes place.

Both of these elements are present in LFE. Each of the five strands consists of three workshops which are four to six hours in length. There should be a minimum of four weeks between workshops.

Allowing four to six weeks between sessions also provides the participants opportunities to pursue new activites according to what is most feasible at the school site. In some cases, LFE participants even have the opportunity to schedule where and when the training sessions are held. The LFE program is sensitive to the fact that time is a valuable resource and is set up so as to accommodate the needs of participants.

Q. HOW DOES LFE PROVIDE COLLABORATION FOR PARTICIPANTS?

A. There are two basic opportunities for collaboration. First, a basic belief held by the LFE program developers is that the school administrator should work with others on staff to apply the concepts and skills developed in the workshops; specific techniques for doing so are part of the program.

Second, the workshop sessions include activities designed to develop collegial support. For those who wish to formalize the process, it is possible to form pairs or triads of peers to observe one another, give feedback, share ideas and provide reassurance and support when one explores new ideas and skills outside of the workshop sessions.

LFE is based on the belief that collaboration provides for intellectual stimulation, breaks the grip of psychological isolation, and provides a safe environment for testing ideas.

IV. CONCLUSION

The LFE program recognizes that participants are being asked to take part in a change effort. The research says that the most effective administrators are risk-takers. LFE asks that you try some behaviors that may be new to you and your staff. This will create a change in the way things happen in your school and they may or may not be as successful as you would like. WHY SHOULD YOU TAKE A RISK? WHY SHOULD YOU BE PART OF A PROGRAM THAT WANTS YOU TO CHANGE WHAT YOU DO? The reasons are as follows:

Participants will be in a program that:

- Is research based
- Has clear goals and operational objectives
- Builds on prior experiences and is related to the school situation
- Focuses on the leader who engages the entire staff in improving the school
- Promotes support and sharing opportunities with colleagues who are engaged in similar activities
- Utilizes the expertise of school practitioners who serve as part of the training cadre

Participants should be expected to attend all three of the workshop sessions and to do the suggested activites at the work site. The extent to which the expectations are met will determine the extent to which one benefits from the program.

For further information about the Leadership for Excellence program and the available training opportunites, call or write:

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September 1988

Leadership for Excellence

CURRICULUM IMPLEMENTATION

STRAND WORKSHOP 1

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School Improvement Program

Activity 1: Introduction and Overview

Goals:
1. To introduce participants
2. To acknowledge expectations
3. To review the agenda

Time: 30 minutes

Materials: Transparency 1: "Curriculum Implementation: Strand Goals"
Transparency 2: "Goals/Agenda"
Handout 1: "Curriculum Implementation: Strand Goals"
Handout 2: "Goals/Agenda"

Instructions:

1. Introduce presenters and have participants introduce themselves by giving name and position. Ask participants how many have a curriculum director or coordinator who has districtwide responsibilities for curriculum development. Ask how many have direct responsibility for curriculum development. This will indicate the level of involvement each person has before the curriculum has to be implemented.

2. Using **Transparency 1, Curriculum Implementation: Strand Goals**, and **Handout 1, Curriculum Implementation: Strand Goals**, review the overall goals and indicate the focus is on implementation and not development of curriculum.

3. Review the agenda using **Handout 2, Goals/Agenda** and **Transparency 2, Goals/Agenda**.

4. Have each participant state an expectation, question, or concern about the content of the workshop. Record these on chartpack to be referred to later.

CURRICULUM IMPLEMENTATION

STRAND GOALS

1. To develop a knowledge base of the current research and theory about curriculum alignment and implementation

2. To work with staff to implement a new or revised curriculum plan

3. To develop a plan to monitor curriculum implementation

GOALS

1. To understand the phases of a curriculum cycle
2. To recognize the need for curriculum alignment
3. To become familiar with the theory and research base for curriculum implementation
4. To develop a plan for working with staff for curriculum implementation

AGENDA

1. Introduction and Overview
2. Curriculum Alignment

   Break
3. Curriculum Alignment (continued)
4. Research Overview and Jigsaw
5. Action Planning
6. Application Opportunities

CURRICULUM IMPLEMENTATION

Strand Goals

1. To develop a knowledge base of the current research and theory about curriculum alignment and implementation

2. To work with staff to implement a new or revised curriculum plan

3. To develop a plan to monitor curriculum implementation

GOALS AND AGENDA

Goals

1. To understand the phases of a curriculum cycle
2. To recognize the need for curriculum alignment
3. To become familiar with the theory and research base for curriculum implementation
4. To develop a plan for working with staff for curriculum implementation

Agenda

1. Introduction and Overview
2. Curriculum Alignment

   Break
3. Curriculum Alignment (continued)
4. Research Overview and Jigsaw
5. Action Planning
6. Summary and Application Opportunities

Activity 2: Curriculum Alignment

Goals:
1. To understand the phases of a curriculum cycle
2. To introduce key curriculum alignment and implementation concepts
3. To identify in-district responsibilities for curriculum management

Time: 45 minutes

Materials:
Transparency 3: "Curriculum Improvement"
Transparency 4: "Components of the Curriculum Cycle"
Transparency 5: "Curriculum Cycle/Textbook Adoption"
Transparency 6: "Steps in the Curriculum Cycle"
Handout 3: "Curriculum Improvement"
Handout 4: "Components of the Curriculum Cycle"
Handout 5: "Curriculum Cycle/Textbook Adoption"
Handout 6: "Steps in the Curriculum Cycle"

Instructions:

1. Using **Transparency 3** and **Handout 3, Curriculum Improvement,** talk about the two major phases of a curriculum cycle.

   - Phase one is usually a district level function involving a district office administrator and a select group of teachers who represent the breadth of the subject under development. If the district is small, this may be the responsibility of a building principal or head teacher. The process includes districtwide program evaluation, and research and development.

   - Phase two occurs with implementation and monitoring of the curriculum at the building level, which is primarily the responsibility of the principal and the staff. If available, district office staff will act as support for building level efforts.

2. Using **Transparency 4, Components of the Curriculum Cycle,** and **Handout 4, Components of the Curriculum Cycle**, review the types of activities that may take place in each phase.

- Program Evaluation: This is a look backwards to see how effective the current curriculum has been in producing the desired student outcomes. Each of the first four components should be evaluated for adequacy and appropriateness. Student outcomes should be evaluated in terms of the goals and objectives.

- Research and Development: For most subject areas this is a process for revision of an existing curriculum. On occasion a new program, or part of a program, needs to be created, e.g., computer education or AIDS curriculum. This is the time to consult the best resources, e.g., recent research, experts, national subject area organizations, for helping to decide what should be in the new curriculum. Curriculum guides also are prepared during this phase.

- Implementation: Individual schools need to carefully examine the written curriculum and agree what is to be taught for each grade. This will include agreement within and across grade levels. Participation in staff development may be needed to ensure implementation of the curriculum.

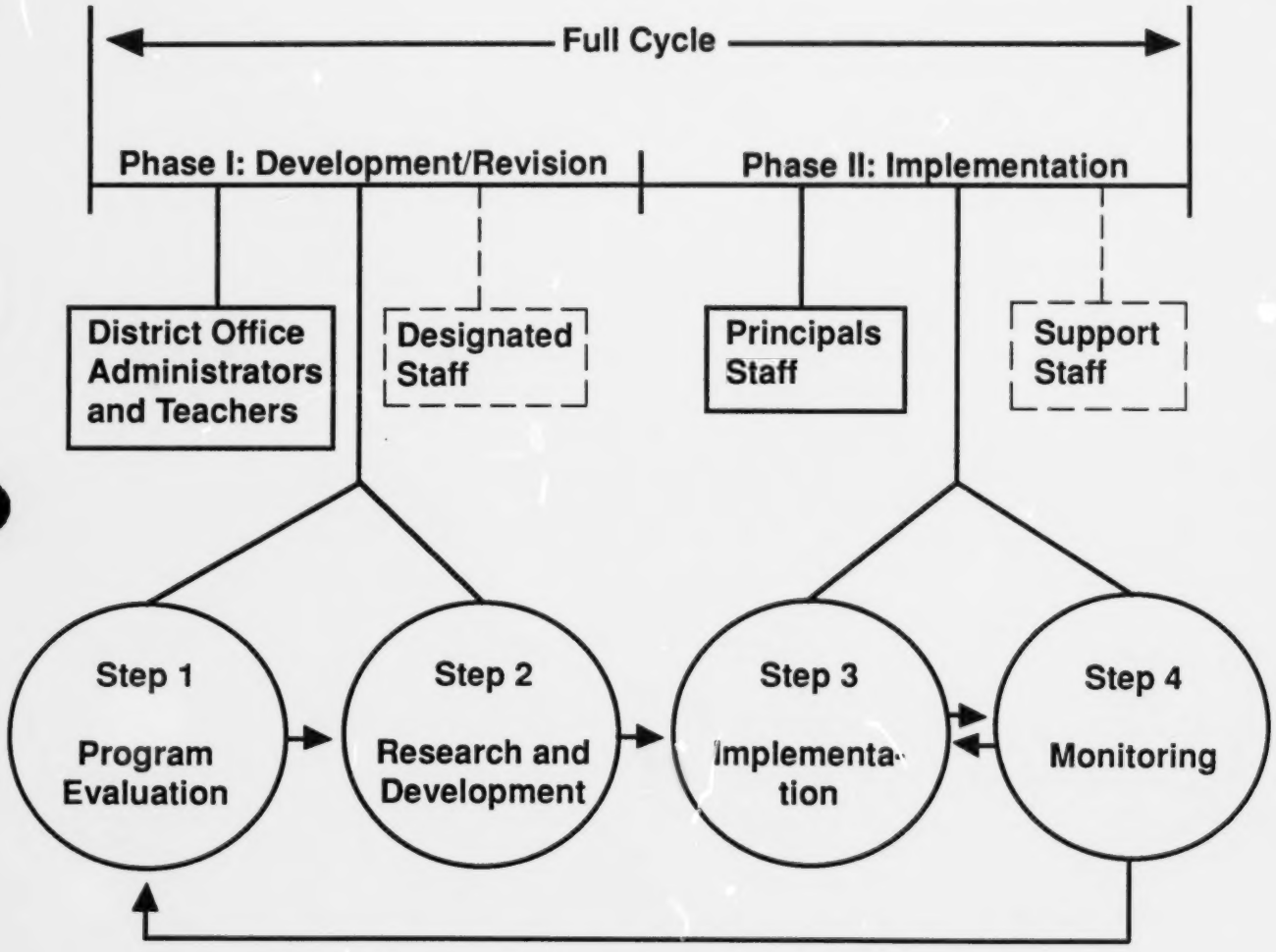
- Monitoring: Tracking progress of student outcomes on the agreed upon goals takes place during monitoring. If the curriculum requires certain teaching practices to be used, these also will be monitored.

Tell participants that the process may take five to seven years. Evaluation should take one year; research and development, one to one and a half years; implementation, one year; and monitoring, one to two and a half years. It would be preferable to have a district policy that establishes a curriculum management plan that sets the guidelines and expectations for the curriculum cycle.

3. Using **Transparency 5, Curriculum Cycle Textbook Adoption** and **Handout 5, Curriculum Cycle Textbook Adoption**, have participants think about the last textbook adoption and curriculum cycle and record the activities they engaged in, impressions they had of the process and who was involved. Discuss this in groups of three or four and report what participants see as common strengths and weaknesses.

4. Display **Transparency 6, Steps in the Curriculum Cycle** and use **Handout 6, Steps in the Curriculum Cycle**, to show how the steps are interrelated. Step 1 is an assessment of the five components. The assessment includes data collection, analysis and recommendations. Step 2, research and development, is a revision, if needed, of the components in Step 1. Step 3, implementation, puts the plan generated in Step 2 into practice. Step 4, monitoring, looks at the use of practice and materials in the classroom to determine how well students are learning the intended curriculum.

CURRICULUM IMPROVEMENT



COMPONENTS OF THE CURRICULUM CYCLE

PHASE I: A. Program Evaluation

- Philosophy (Guiding Beliefs/Principles)
- Program Characteristics
- Goals/Objectives
- Instruction/Materials
- Student Outcomes

B. Research and Development

- Revision
  - Database
  - Theory/Research Literature
  - Teacher Input
- Curriculum Guide
  - Scope and Sequence
  - Goals/Objectives
  - Assessment
  - Resources
  - Teaching Strategies

PHASE II: C. Implementation

- Curriculum Alignment
  - District Level
  - Building Level
- Staff Development
  - District Level
  - Building Level

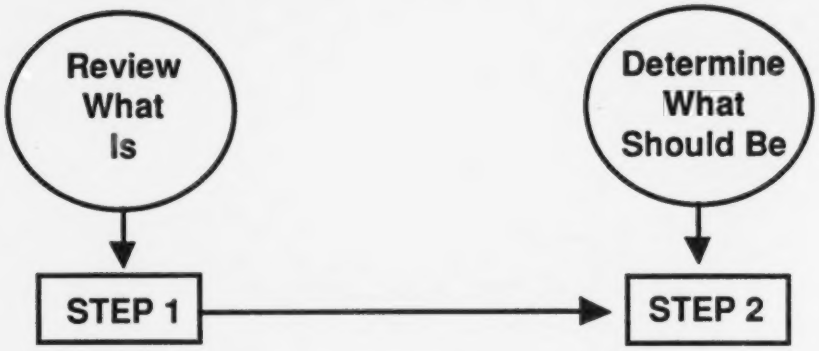
D. Monitoring

- Student Outcomes
  - Building Level
  - District Level
- Use of Practice
  - Observation
  - Discussion

CURRICULUM CYCLE/TEXTBOOK ADOPTION

	Program Evaluation	Research and Development	Textbook Adoption	Implementation	Monitoring
Activities That Occurred					
Who Was Involved					
Your Impression of the Process					

STEPS IN THE CURRICULUM CYCLE

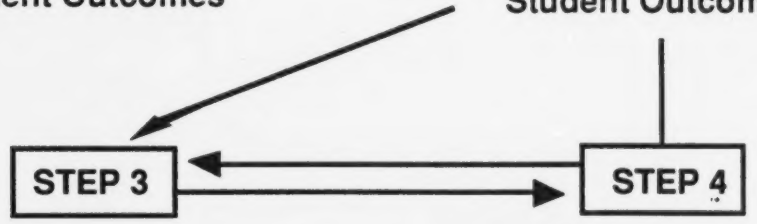


PROGRAM EVALUATION

- Philosophy
- Program Characteristics
- Goals/Objectives
- Instruction/Materials
- Student Outcomes

RESEARCH AND DEVELOPMENT

- Philosophy
- Program Characteristics
- Goals/Objectives
- Instruction/Materials
- Student Outcomes



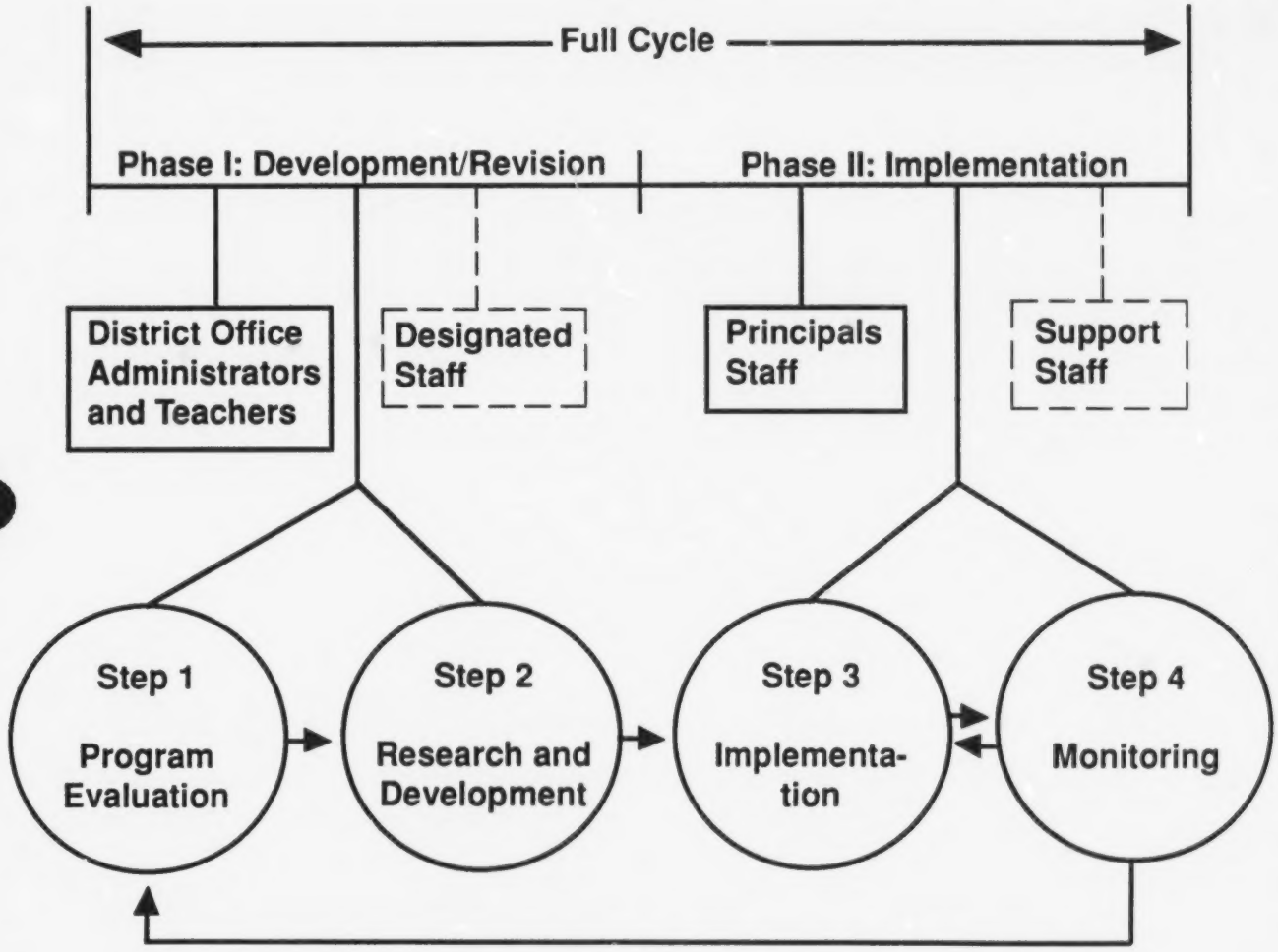
IMPLEMENTATION

- Use of Practice
- Use of Curriculum Guide
- Use of Resources
- Needed Staff Development

MONITORING

- Observations
- Assessment

CURRICULUM IMPROVEMENT



COMPONENTS OF THE CURRICULUM CYCLE

PHASE I:

A. Program Evaluation
- Philosophy (Guiding Beliefs/Principles)
- Program Characteristics
- Goals/Objectives
- Instruction/Materials
- Student Outcomes

B. Research and Development
- Revision
  - Database
  - Theory/Research Literature
  - Teacher Input
- Curriculum Guide
  - Scope and Sequence
  - Goals/Objectives
  - Assessment
  - Resources
  - Teaching Strategies

PHASE II:

C. Implementation
- Curriculum Alignment
  - District Level
  - Building Level
- Staff Development
  - District Level
  - Building Level

D. Monitoring
- Student Outcomes
  - Building Level
  - District Level
- Use of Practice
  - Observation
  - Discussion

CURRICULUM CYCLE/TEXTBOOK ADOPTION

	Program Evaluation	Research and Development	Textbook Adoption	Implementation	Monitoring
Activities That Occurred					
Who Was Involved					
Your Impression of the Process					

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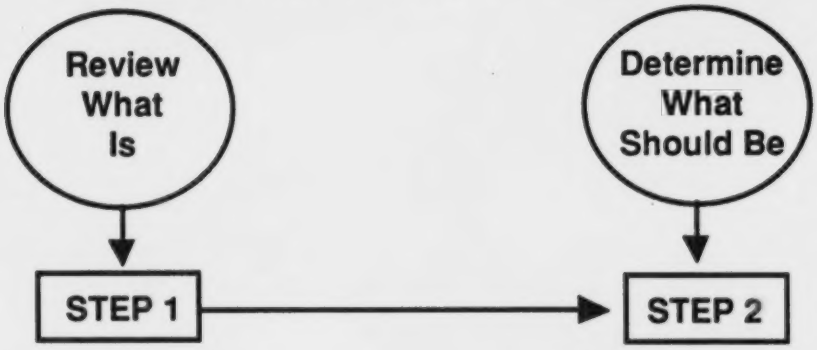
STEPS IN THE CURRICULUM CYCLE



PROGRAM EVALUATION

- Philosophy
- Program Characteristics
- Goals/Objectives
- Instruction/Materials
- Student Outcomes

RESEARCH AND DEVELOPMENT

- Philosophy
- Program Characteristics
- Goals/Objectives
- Instruction/Materials
- Student Outcomes

IMPLEMENTATION

- Use of Practice
- Use of Curriculum Guide
- Use of Resources
- Needed Staff Development

MONITORING

- Observations
- Assessment

Activity 3: Curriculum Alignment

Goal: To have participants understand the purposes of curriculum alignment

Time: 30 minutes

Materials: Transparency 7: "Steps to Instructional Planning Form"
Transparency 8: "Aligned Curriculum"
Transparency 9: "Non-Aligned Curriculum"
Handout 7: "Steps to Instructional Planning Form"
Handout 8: "Aligned Curriculum"
Handout 9: "Non-Aligned Curriculum"

Instructions:

1. Using **Transparency 7, Steps to Instructional Planning Form**, ask participants to list the steps in preparing a teaching unit. In groups of two or three, have them compare their lists and combine them into one list of steps.

2. Have participants report and see if they have generated a list that includes goals and objectives, assessment and instructional strategies and materials. Talk about flexibility and how, if you change one part, others may or may not have to be changed, i.e., if you change goals everything else changes, if you change materials, perhaps nothing else changes.

3. Using **Transparency 8, Aligned Curriculum,** and **Handout 8, Aligned Curriculum**, explain that the closer the match among goals and objectives, instructional strategies and materials, and assessment, the more students will learn.

4. **Transparency 9, Non-Aligned Curriculum,** and **Handout 9, Non-Aligned Curriculum**, provide an example of how only a small portion of the desired learning for students is aligned. Our knowledge about student progress depends upon the extent to which what is measured is what was taught, and what was taught was determined to be of importance.

5. On **Transparency 7, Steps to Instructional Planning**, write in:

    1. Determine goals and objectives
    2. Develop assessment measures
    3. Determine instruction strategies
    4. Select instructional materials and activities.

    Indicate that it is often helpful to design the assessment tool before planning materials and activities. It helps clarify what you want students to learn and legitimizes teaching to the test.

6. Talk about using the test information to plan for student and teacher self-evaluation.

STEPS TO INSTRUCTIONAL PLANNING FORM

1. _____

2. _____

3. _____

4. _____

5. _____

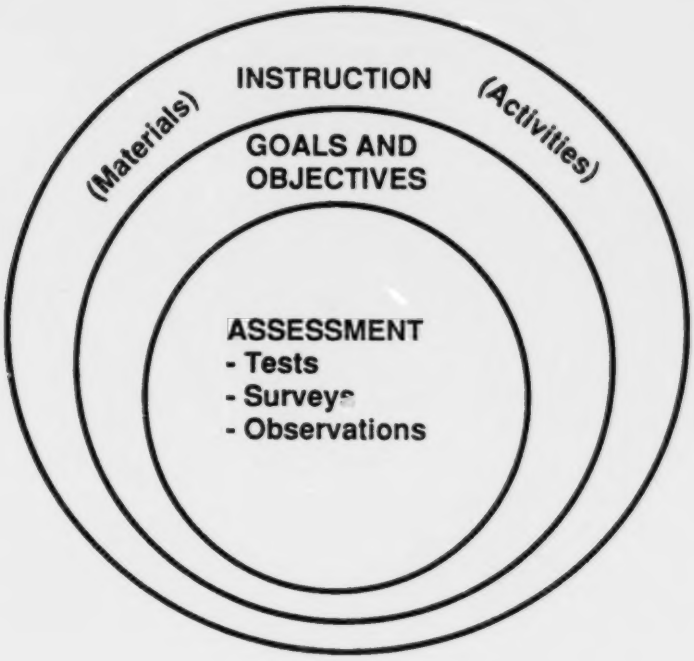
6. _____

7. _____

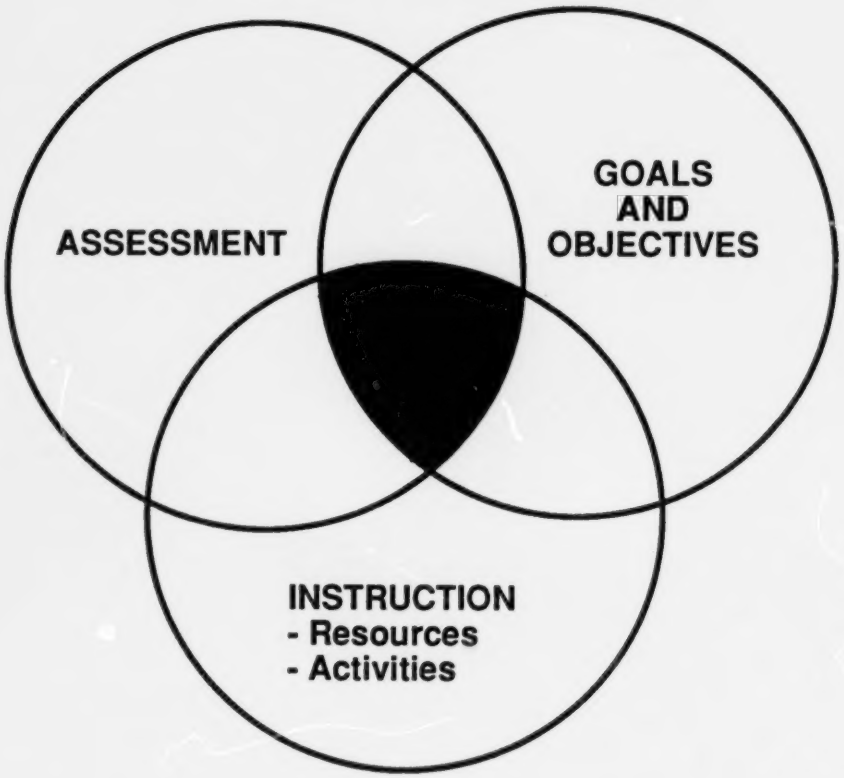
8. _____

ALIGNED CURRICULUM

- **To the extent that objectives, resources, activities, and measures match, students learn better**
- **Aligned Curriculum**



NON-ALIGNED CURRICULUM



STEPS TO INSTRUCTIONAL PLANNING FORM

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

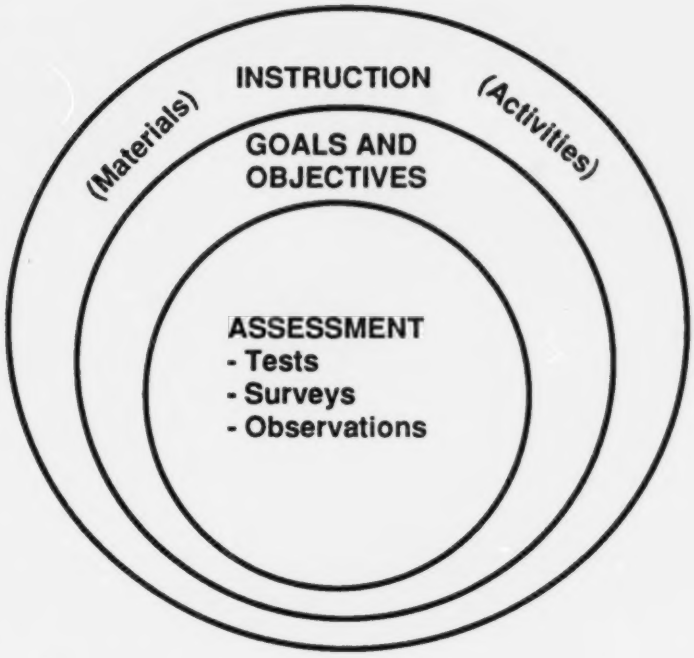
7. _____

8. _____

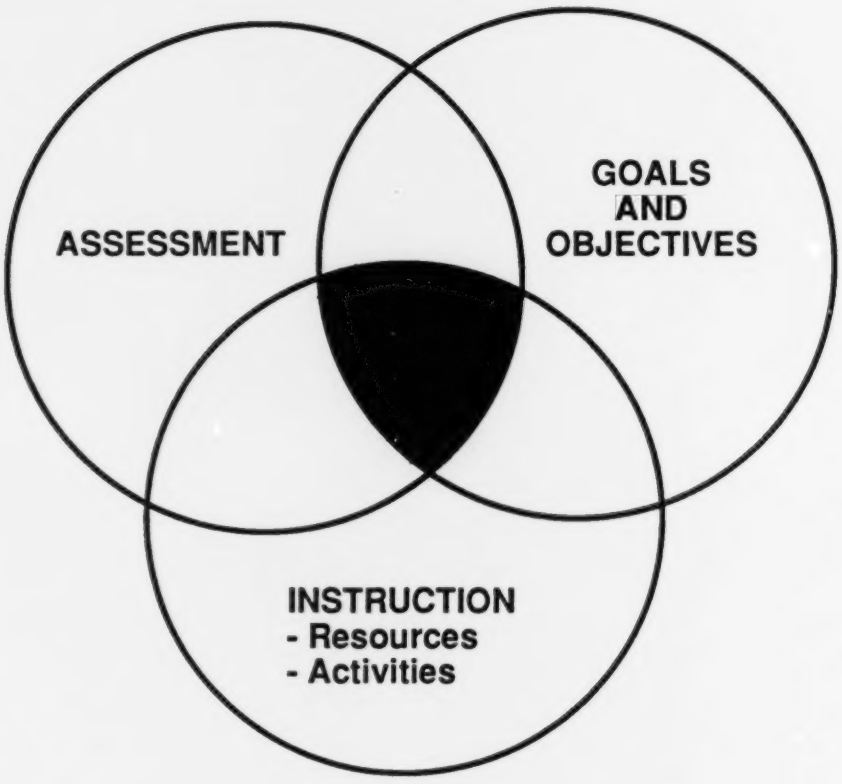
ALIGNED CURRICULUM

- To the extent that objectives, resources, activities, and measures match, students learn better

- Aligned Curriculum



NON-ALIGNED CURRICULUM



Activity 4: Research Overview and Jigsaw

Goals:

1. To introduce key curriculum concepts related to effective schools research
2. To highlight key principal instructional leadership concepts and responsibilities related to effective schools research
3. To develop an awareness of current effective schooling literature and research on curriculum alignment and implementation

Time: 60 minutes

Materials:

Transparency 10: "Effective Schooling Research Base"
Transparency 11: "Classroom Characteristics and Practices"
Transparency 12: "School Characteristics and Practices"
Transparency 13: "District Characteristics and Practices"
Transparency 14: "Jigsaw Activity"
Transparency 14a: "Jigsaw Activity: Questions to Answer"
Transparency 15: "Principal as Instructional Leader"
Transparency 16: "Key Curriculum Areas of Principal Instructional Leadership"
Handout 10: "Research Synthesis: Key Curriculum Concepts"
Handout 11: "Articles for Jigsaw Activity"
Handout 12: "Instructions for Jigsaw Activity"
Handout 13: "Key Areas of Principal Instructional Leadership"

Instructions:

1. Introduce effective schools research with emphasis on curriculum and principal instructional leadership as it relates to curriculum implementation:

   a. We know a lot about what it takes to get students to learn well.

   b. NWREL has synthesized the research findings from more than 300 studies into a compact, useful form—Research Synthesis.

   c. Discuss **Transparency 10, Effective Schooling Research Base, Transparency 11, Classroom Characteristics and Practices, Transparency 12, School Characteristics and Practices**, and **Transparency 13, District Characteristics and Practices**. Refer to **Handout 10, Research Synthesis: Key Curriculum Concepts.**

2. Introduce **Transparency 14, Jigsaw Activity,** and **14a, Jigsaw Activity: Questions to Answer**. The **Jigsaw Activity (Handout 12)** is an opportunity to develop an awareness of the current research and literature on curriculum implementation.

3. Directions for Jigsaw:

   a. Participants will divide into "expert" groups. Each member will read an assigned article. See **Handout 11, Articles for Jigsaw Activity.**

   b. Participants of each "home" group will meet with other participants who read the same article and discuss key points of the articles.

   c. Participants will agree to report to "home" groups five to seven key points from the article.

   d. Participants will meet in "home" groups and each will report on assigned article.

   e. "Home" groups generalize five to seven key points from all the articles that are critical for successful curriculum implementation.

   f. Full group will reconvene for reports from all "home" groups.

4. Designate the appropriate number of five-member "home" groups and make reading assignments.

   - Using cards or slips of paper, hand each participant group a reading assignment.

   - Cards should be marked with a number and letter assignment. As there are five articles, mark cards in groups of five to correspond to the number of participants. Extra participants should be assigned to groups.

   - Cards should be designated as follows:

     Group 1: 1-A, 1-B, 1-C, 1-D, 1-E
     Group 2: 2-A, 2-B, 2-C, 2-D, 2-E

     Continue until sufficient cards have been made to include all participants.

5. Hand out copies of the articles. Announce reading assignments. All participants with the assigned letter will individually read the articles. Have participants complete reading assignments. (15 minutes)

6. Convene "letter assignment" participants in groups. Groups are to discuss the reading and reach consensus on what they will report to "home" groups regarding their article. (20 minutes)

   Ask participants with the same sections to raise their hands to identify "letter" fellows. Call out each article to help participants locate one another.

7. Convene "home" groups. Each group member will report on the section read (approximately 7 minutes each) and the group will discuss all articles to reach consensus on ways that vision contributes to effective leadership. They will report to the full group. (15 minutes)

   (Total activity time: 35 minutes)

8. Reconvene full group and hear reports from each group on highlights. (10 minutes) Answer any questions and close the activity.

9. Summarize by using **Transparency 16, Key Areas of Principal Instructional Leadership,** and **Handout 13, Key Areas of Principal Instructional Leadership**.

EFFECTIVE SCHOOLING RESEARCH BASE

- School Effects
- Teacher Effects
- Instructional Leadership
- Curriculum Alignment
- Program Coupling
- Change and Implementation

CLASSROOM CHARACTERISTICS AND PRACTICES

INSTRUCTION GUIDED BY A PREPLANNED CURRICULUM

- Goals and objectives
  - develop
  - prioritize
  - select/approve
  - sequence
  - organize
- Timeline
- Lesson plans
  - objectives
  - resources
  - activities
  - alternatives
- Instruction reviewed and modified

SCHOOL CHARACTERISTICS AND PRACTICES

- **Strong Leadership Guides the Instructional Program**
  - **Emphasis on learning and achievement**
  - **Clear vision**
  - **Effective teaching practices**
  - **Curriculum expectations set**
  - **Learning time protected**
  - **Safe, orderly environment**
  - **Monitoring of student performance**
  - **Rewards and incentives**
  - **Provides resources**
  - **Parent involvement and communication**
  - **High instructional standards**
  - **Program improvement expected**
  - **Staff involvement**

SCHOOL CHARACTERISTICS AND PRACTICES

- The Curriculum is documented and used
  - Goals & objectives
  - Instructional activities
  - Assessments
- Collaborative curriculum planning/decision making
- Curriculum identity established at building level
- Scope, sequence and priorities are widely communicated

DISTRICT CHARACTERISTICS AND PRACTICES

CURRICULUM PLANNING ENSURES CONTINUITY

- District planning
- Objectives prioritized and sequenced
- Objectives provide range of learnings
- Resources catalogued
- Resources and instructional strategies matched to high priority objectives
- Support

CLEAR GOALS AND OBJECTIVES

- Building/district curriculum resources
- Curriculum alignment
- Collaborative planning
- Scope and priorities

JIGSAW ACTIVITY

Steps	Assignment
1. Reading Assignment	A - B - C - D - E -
2. Meet with Expert Groups (Letters)	All with "A" All with "B" etc.
3. Meet with Home Groups (Numbers)	1-A through 1-E 2-A through 2-E etc.
4. Report Implications	

JIGSAW ACTIVITY

QUESTIONS TO ANSWER

1. What are the key messages about curriculum?

2. What are some of the implications for administrative leadership?

3. What caveats deserve attention relative to the key messages presented in the article?

PRINCIPAL AS INSTRUCTIONAL LEADER

- Clear vision
- Improving curriculum
- Improving instruction
- Monitor school performance
- Positive school climate and culture
- Resources for improvements
- Handles routines efficiently

KEY CURRICULUM AREAS OF PRINCIPAL INSTRUCTIONAL LEADERSHIP

- Establishes and maintains curriculum
- Knows quality instructional practice
- Monitors school performance

RESEARCH SYNTHESIS
KEY CURRICULUM CONCEPTS

The Effective Schooling Research

The effective schooling research base identifies schooling practices and characteristics associated with measurable improvements in student achievement and excellence in student behavior. These "effective schooling practices" include elements of schooling associated with a clearly defined curriculum; focused classroom instruction and management; firm, consistent discipline; close monitoring of student performance; and strong instructional leadership.

- School Effects Research: the whole school is studied to identify schoolwide practices that help students learn
- Teacher Effects Research: studies of teachers in the classroom to discover effective practices
- Research on Instructional Leadership: studies focused on what principals do to support teaching and learning
- Curriculum Alignment Research: studies on effective methods of organizing and managing curriculum
- Program Coupling Research: examination of the interrelationships among practices used at the district, school building, and classroom levels
- Research on Educational Change: studies to identify conditions and practices that promote significant, durable change in educational programs

1. CLASSROOM CHARACTERISTICS AND PRACTICES

Learning is an individual process that is shaped in the classroom. On a daily basis, teachers and students work together to extend and refine each learner's set of concepts and skills. Thoroughly planned lessons, focused instruction, and positive classroom management skills increase the probability of success.

Instruction is Guided by a Preplanned Curriculum

- Learning goals and objectives are developed and prioritized according to district and building guidelines, selected or approved by teachers, sequenced to facilitate student learning and organized or grouped into units or lessons.

- Unit or lesson objectives are set in a timeline so the calendar can be used for instructional planning.

- Instructional resources and teaching activities are identified, matched to objectives and student developmental levels, and recorded in lesson plans. Alternative resources and activities are identified, especially for priority objectives.

- Resources and teaching activities are reviewed for content and appropriateness and are modified according to experience to increase their effectiveness in helping students learn.

2. SCHOOL CHARACTERISTICS AND PRACTICES

The school is more than a collection of people, subjects, and grade levels. The qualities of the school as a whole can either enhance or detract from the classroom learning environment. Clear expectations, consistency and collaboration among adults, strong instructional leadership, and a central focus on learning all are important in pursuing instructional effectiveness.

Strong Leadership Guides the Instructional Program

- Instructional leaders portray learning as the most important reason for being in school; public speeches and writings emphasize the importance and value of high achievement.

- The leader has a clear understanding of the school's mission and is able to state it in direct, concrete terms. Instructional focus is established that unifies staff. The building leadership believes that all students can learn and that the school makes the difference between success and failure.

- Building leaders know and can apply teaching and learning principles; they know research, legitimize it and foster its use in problem solving. Effective teaching practices are modeled for staff.

- Leaders set expectations for curriculum quality through the use of standards and guidelines. Alignment is checked and improved; priorities are established within the curriculum; curriculum implementation is monitored.

- Learning time is protected from disruption. Administrative matters are handled with time-conserving routines that don't disrupt instructional activities; time use priorities are established, widely communicated, and enforced.

- A safe, orderly school environment is established and maintained.

- Instructional leaders check student progress frequently, relying on explicit performance data. Results are made visible; progress standards are set and used as points of comparison; discrepancies are used to stimulate action.

- Leaders set up systems of incentives and rewards to encourage excellence in student and teacher performance; they act as figureheads in delivering awards and highlighting the importance of excellence.

- Resources needed to ensure the effectiveness of instructional programs are acquired; resources are sought from many sources, including the community; allocations are made according to instructional priorities.

- School leaders establish standard procedures which guide parent involvement. Emphasis is placed on the importance of parental support of the school's instructional efforts.

- There is frequent, two-way communication with parents. Leaders make the accomplishments of students, staff, and the school as a whole visible to the public.

- Instructional leaders expect all staff to meet high instructional standards. Agreement is obtained on a schoolwide instructional model; classroom visits to observe instruction are frequent; teacher supervision focuses on instructional improvement; staff development opportunities are secured and monitored.

- Leaders express an expectation and strong desire that instructional programs improve over time. Improvement strategies are organized and systematic; they are given high priority and visibility; implementation of new practices is carefully monitored; staff are supported.

- Leaders involve staff and others in planning implementation strategies. They set and enforce expectations for participation; commitments are made and followed through with determination and consistency; leaders rally support from different constituencies in the school community.

The Curriculum is Based on Clear Goals and Objectives

- Learning goals and objectives are clearly defined and displayed; teachers actively use building curriculum resources for instructional planning. District curriculum resources are used, when available.

- Clear relationships among learning goals, instructional activities and student assessments are established and written down.

- Collaborative curriculum planning and decision making are typical. Special attention is focused on building good continuity across grade levels and courses; teachers know where they fit in the curriculum.

- Staff, students, and the community know the scope of the curriculum and the priorities within it.

3. DISTRICT CHARACTERISTICS AND PRACTICES

The district creates an environment in which the pursuit of instructional effectiveness is valued. Clear and stable policies, expectations for improvement, and strong systems of support all help schools become more effective.

Curriculum Planning Ensures Continuity

- Planning for curriculum and instruction is consistent at the district, school and classroom levels; district frameworks, guidelines, and quality standards unify efforts districtwide.

- A limited number of priority objectives are identified and used to clarify what students are expected to learn. Objectives are sequenced by grade level; reviewed for technical quality, specificity and clarity; and targeted for students according to development level and what they are expected to learn.

- Objectives are selected which represent a range of learnings and can be taught within an established timeframe.

- Learning materials, space available, and special facilities, staff and other instructional resources are identified and catalogued by objective or goal area.

- Resources are matched to objectives, checked for accuracy and alignment, and matched to student development levels. Instructional strategies also may be identified and documented, especially for high priority objectives.

- District staff provide direct support for building and classroom curriculum efforts.

ARTICLES FOR JIGSAW ACTIVITY

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A. Kimpston, Richard D. and Anderson, Douglas H. "The Locus of Curriculum Decision Making and Teachers' Perceptions of Their Own Attitudes and Behaviors Toward Curriculum Planning," *Journal of Curriculum and Supervision*, Winter 1986, Vol. 1, No. 2.

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THE LOCUS OF CURRICULUM DECISION MAKING AND TEACHERS' PERCEPTIONS OF THEIR OWN ATTITUDES AND BEHAVIORS TOWARD CURRICULUM PLANNING

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Curriculum decisions are made by various individuals and groups, in a variety of educational settings, and at several levels in the educational hierarchy. One such group is classroom teachers. There are frequent questions, however, regarding the role teachers should play in curriculum decision making and whether control of decisions should lie with them or with individuals far removed from the classroom.[1]

This article presents the results of a study to determine teachers' perceptions of their own attitudes and behaviors toward the curriculum and curriculum decisions and the relationships between these attitudes and behaviors and the locus of curriculum decision making in their districts. Our investigation sought to determine if the context in which curriculum decisions are made in school districts relates to teachers' perceptions of their own behaviors with respect to the formal curriculum and attitudes regarding its planning and use. Such information is critical for establishing curriculum decision-making policy in school systems.

REVIEW OF LITERATURE

A review of the literature helped to bring into sharper focus the research pertinent to settings, products, levels, and contexts of curriculum decision making. In conducting our study, we selected a definition of curriculum that would be easy to communicate to the participants in order to help them make a sharp distinction between what is to be taught (curriculum) and how it is to be taught (instruction). We specified *curriculum decisions as those relating to what is to be taught, to which students, for what period of time, and in what particular order or sequence*. This definition is consistent with those formulated by Beauchamp, Johnson, and Taba.[2]

[1]Joel Weiss, "The Realities of Curriculum Work: The Classroom Level," in *Considered Action for Curriculum Improvement*, ed. Arthur W. Foshay (Alexandria, Va.: Association for Supervision and Curriculum Development, 1980), pp. 176–195.

[2]George A. Beauchamp, "Basic Components of a Curriculum Theory," *Curriculum Theory Network* 10 (1972): 16–24; Mauritz Johnson, "Definitions and Models in Curriculum Theory," *Educational Theory* 17 (April 1967): 127–140; and Hilda Taba, *Curriculum Development: Theory and Practice* (New York: Harcourt, Brace & World, 1962).

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We also made a distinction between curriculum policy making and curriculum development, because curriculum policy and curriculum development decisions were used to categorize school districts by locus of curriculum decision making. This distinction has been described by Short,[3] who stipulated *curriculum policy making* as primarily a controlling activity that involves specification of such things as the kind, structure, and intent of the curriculum deemed desirable to be developed, enacted, and realized. He defines *curriculum development* as a technical process involving translation of curriculum policy into educational programs.

What are the distinctions among types of curriculum development and decision settings? Short indicates that final responsibility for the curriculum still rests with the local district, but that districts exercise their powers within changed structures of authority and governance.[4] These changed structures include federal court actions and legislation, state courts, and contracts with professional employees. Settings for curriculum development may be user-based or externally based, with respect to locus of decision making.[5] Externally based decisions and development are exemplified by large-scale curriculum projects that are national, regional, or statewide in scope. User-based curriculum development and decisions relate to those activities occurring at the local district level, such as the work of writing teams and textbook selection committees.

Resulting products of curriculum development can be either site-specific or generic.[6] *Site-specific* curriculum development refers to development done locally for a particular school setting; *generic* development involves preparation of curriculum for educational systems. User-based, site-specific curriculum development exists where development is organized and conducted under the direction of the local district and where the resulting curriculum is to be used within the district. Curriculums developed by this means and for this purpose were the focus of the research presented here.

Levels of decision making were classified by Goodlad as: (1) *societal* (local/state boards of education, state departments of education, and federal agencies); (2) *institutional* (school faculties, central office personnel, curriculum committees); and (3) *instructional* (individual teachers and teams of teachers).[7] Loucks and Lieberman indicated that some educational systems

[3]Edmund C. Short, "The Forms and Use of Alternative Curriculum Development Strategies: Policy Implications," *Curriculum Inquiry* 13 (Spring 1983): 43–64.

[4]Edmund C. Short, "Authority and Governance in Curriculum Development: A Policy Analysis in the United States Context," *Educational Evaluation and Policy Analysis* 5 (Summer 1983): 195–205.

[5]F. Michael Connelly, "The Functions of Curriculum Development," *Interchange* 3, 2/3 (1972): 161–177.

[6]Decker Walker, "Approaches to Curriculum Development," in *Value Conflicts and Curriculum Issues: Lessons from Research and Experience*, ed. Jon Schaffarzick and Gary Sykes (Berkeley, Calif.: McCutchan Publishing Co., 1979), pp. 263–290.

[7]Gary A. Griffin, "Levels of Curricular Decision Making," in *Curriculum Inquiry: The Study of Curriculum Practice*, ed. John I. Goodlad and associates (New York: McGraw-Hill Book Co., 1979), pp. 77–99.

prefer districtwide or schoolwide curriculums, while others encourage teachers to make their own curriculum decisions.[8] Two of the levels (institutional and instructional) and the three contexts (district, school, and classroom) of curriculum decisions served to focus our research.

Do teachers want to be involved in curriculum decisions? If so, at what level within the system? Studies pertinent to these questions are comparatively scarce, especially research regarding teachers' beliefs and attitudes about the locus of curriculum decision making.[9] An exception is the study by Young[10] in which Canadian teachers identified the kinds of curriculum work in which they wished to participate and the level at which they believed the work should be performed. They chose the school district more frequently than any other level (province, region, school, or classroom). Teachers also indicated that the school district was the preferred level for six out of seven kinds of curriculum work related to individual subjects: selecting a curriculum, adapting a curriculum, winning support for a curriculum, evaluating curriculum decision making, creating a curriculum, and translating a curriculum into instruction. The research of Peterson and Griffin supports these findings.[11] It is noteworthy that in a study conducted in a suburban Detroit school district, teachers expressed the belief that they have little influence on curriculum decision making, but that they, rather than district-level personnel, should have the major influence on curriculum decisions.[12] A report to the United States National Institute of Education indicated that teachers have a strong interest in being involved in all levels of decision making.[13]

The dearth of research regarding teacher beliefs and attitudes in relation to locus of curriculum decision making has been somewhat offset by the number of studies about teacher involvement in curriculum decisions. This research suggests that teachers' practices may not be consistent with the attitudes they express. Young reported that increased participation in curriculum decision making holds little or no attraction for teachers.[14] Olson and

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[8]Susan F. Loucks and Ann Lieberman, "Curriculum Implementation," in *Fundamental Curriculum Decisions*, ed. Fenwick W. English (Alexandria, Va.: Association for Supervision and Curriculum Development, 1983), pp. 126–141.

[9]John Schwille, Andrew Porter, and Michael Gant, "Content, Decision-Making, and the Politics of Education," paper presented at the annual conference of the Politics of Education Association, San Francisco, 1979; William M. Bridgeland, Edward A. Duane, and Mark E. Stern, "Teacher Sense of Curriculum Power in a Suburban School District," *Education* 102 (Winter 1981): 138–144.

[10]Jean H. Young, "The Curriculum Decision-Making Preferences of Alberta School Personnel, The University of Alberta, Edmonton, 1977. (Mimeographed.)

[11]Barbara Peterson and Gary Griffin, "The Analysis of Assessment Questionnaire, CSI Field Studies, Delano, California," Instruction and Professional Development, National Education Association, Washington, D.C., 1971. (Mimeographed.)

[12]William M. Bridgeland, Edward A. Duane, and Mark E. Stern, "Teacher Sense of Curriculum Power in a Suburban School District," *Education* 102 (Winter 1981): 138–144.

[13]Jon Schaffarzick, "Teacher and Lay Participation in Local Curriculum Change Considerations," paper presented at the annual meeting of the American Educational Research Association, San Francisco, 1976.

[14]Jean H. Young, "Teacher Participation in Curriculum Decision Making: An Organizational Dilemma," *Curriculum Inquiry* 9 (Summer 1979): 113–127.

Kitto stated that teachers give lip service to the importance of curriculum development but devote little time to it.[15] In still other research teachers were found to be oriented toward instruction, not curriculum.[16] Likewise, Lortie reported that teachers are oriented toward short-run planning.[17] Young concluded that teachers are far more interested in how to teach than what to teach and that curriculum concerns are not an integral part of their day-to-day functioning.[18] Connelly and Ben-Peretz are among those who indicate that teachers are willing to participate in curriculum development decisions, although pre-service and inservice education programs have not prepared them for this role.[19]

Although there is a body of research regarding teacher attitudes, behaviors, and beliefs regarding curriculum decisions, no known research has focused specifically on these dimensions of teacher values and behaviors where the locus of curriculum decisions in school districts differs. Here we report research designed to determine whether there is a relationship between the locus of curriculum decision making in school districts and teachers' self-perceptions of their own attitudes and behaviors toward the districts' curriculum processes and products. Our research was conducted in settings where curriculum development is user-based, rather than externally based, and where the resulting curriculum product is site-specific, rather than generic. The district, school, and classroom, as levels of curriculum decision making, were the contexts for measuring teacher attitudes, behaviors, and beliefs about the resulting curriculum and its use in relation to the locus of curriculum decision making.

PROCEDURES

Because of budget and time limitations, we selected six school districts for study from among 57 districts that were categorized by locus of decision making. We used the Curriculum Decision-Making Inventory (CDI)[20] to determine the context (district, school, or classroom) in which these processes occur. The items in this instrument were designed, in part, on the basis of the literature review of curriculum policy and processes. We included additional

[15]John Olson and Richard Kitto, "The Role of the Teacher in Curriculum Development," paper presented at the annual meeting of the Canadian Association for Curriculum Studies, Fredericton, New Brunswick, 1977.

[16]T. R. Morrison, K. W. Osborne, and N. G. McDonald, "'Whose Canada?' The Assumption of Canadian Studies," *Canadian Journal of Education* 2, 1 (1977): 73–83.

[17]Dan Lortie, *School Teacher: A Sociological Study* (Chicago: University of Chicago Press, 1975).

[18]Jean H. Young, "Teacher Participation in Curriculum Decision-Making: An Organizational Dilemma," *Curriculum Inquiry* 9 (Summer 1979): 113–127.

[19]F. Michael Connelly and Miriam Ben-Peretz, "Teachers' Roles in the Using and Doing of Research and Curriculum Development," *Journal of Curriculum Studies* 12 (April–June 1980): 95–107.

[20]Richard D. Kimpston and Douglas H. Anderson, "A Study to Analyze Curriculum Decision Making in School Districts," *Educational Leadership* 40 (November 1982): 63–66.

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items in the CDI based on our experience in curriculum development and questionnaire construction (Figure 1). The respondents were district central office staff members, and their responses were phrased in terms of who *advises, deliberates, decides,* and *approves* each of the curriculum policies and development processes.

Our study has some limitations. First, the results of a study involving teachers from only six districts may be difficult to generalize to a larger population. A second limitation concerns the potential inaccuracies in responses from self-reporting data. Although we conducted numerous interviews with teachers and principals in all six districts and at all grade levels, more confirming information may still be needed.

The categorization of 57 school districts by locus of decision making resulted in nine districts being placed in the *classroom* decision category; 25 were categorized as having *within-school* decision making, and 23 as *district-wide* curriculum decision making. We used a stratified random sample in selecting the six school districts, with two school districts selected from each of the three categories where *all curriculum development decisions* (items 7–15, Figure 1) were reported to be exclusively made in one of the three identified contexts (district, school, or classroom). Our purpose was to prevent overlap in locus of curriculum decision making among the three sample groups. We next conducted structured interviews with the superintendents, curriculum personnel (if such individuals were employed in the districts), elementary, junior high, and high school principals, and teachers to verify the accuracy of the categorization of the six districts. We selected the teachers, who represented various grade levels and subject areas, at random from lists supplied by the school districts. These formal interviews were conducted with

Figure 1. Curriculum Policy and Development Processes

1. Who determines the budget requirements for curriculum development?
2. Who determines the curriculum areas in need of revision and/or improvement?
3. Who determines who will participate in curriculum planning?
4. Who participates in formulating the school district philosophy?
5. Who participates in formulating the school district goals?
6. Who determines what priority will be given to the school district goals?
7. Who decides which goals are to be developed/selected for the various subject areas taught in the school district?
8. Who participates in formulating a rationale for each subject area taught in the school district?
9. Who decides which terminal objectives are to be developed/selected for each subject area taught in the school district?
10. Who decides what the sequence will be for the terminal objectives that are developed/selected for each subject area?
11. Who decides what body of content will be taught in each subject area in the school district?
12. Who decides in what sequence the body of content identified will be taught?
13. Who decides about allocating objectives to content in each subject area taught in the school district?
14. Who decides what textbooks and other resources will be utilized in subject fields taught in the school district?
15. Who decides what minimum level of competence students will be required to demonstrate in each subject area taught?

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three teachers in the primary, intermediate, junior high, and senior high school levels for a total of 12 teachers in each of the six school districts. In addition, we conducted interviews at random with other teachers in each of the 23 schools in the six districts. In all cases the responses during the interviews in the 11 elementary, six junior high, and six senior high schools were consistent with the previous survey results, indicating that the prior classification of school districts by locus of decision making had been accurate. The interview questions were formulated to elicit responses that would characterize a district's curriculum development processes. Questions focused on elements of a system: (1) tasks (What curriculum development tasks are subscribed to in this school district?); (2) positions (Who are the participants in which curriculum development tasks?); (3) expectations (What are the expectations of the participants in the various curriculum development tasks?); (4) time (When and in what sequence are the various curriculum development tasks accomplished?); (5) space (Where are the tasks completed?); and (6) materials/resources (What resources are available for curriculum development?).[21]

Two standard instruments were then administered in person to all K-12 classroom teachers at general faculty meetings called for this purpose. Although 488 teachers in the six school districts were given the instruments to complete, there were some missing data, resulting in a reduction in the size of the sample on different variables. Some teachers had chosen not to participate in the study, and some responses to the questionnaire were too incomplete to use.

The two instruments were:

1. The *Teacher Self-Analysis Inventory* (TSAI). This instrument was designed by Beauchamp specifically to measure teachers' perceptions of their behavior toward their schools' curriculums.[22] It requires respondents to indicate the accuracy of a list of statements. Typical questions from this instrument are:

- *The curriculum has been a useful reference for me in explaining educational objectives to parents* (instrument item number 1).
- *I refer to the curriculum frequently in planning ongoing classroom activities* (instrument item number 33).

In our study, Cronbach's Alpha Reliability Coefficient was .85. The standard error of measurement was 7.6.

2. The *Curriculum Attitude Inventory* (CAI). Developed by Langenbach,[23] this instrument was designed to measure teacher attitudes toward curriculum

[21]Richard D. Kimpston, Diana J. Barber, and Karen B. Rogers, "The Program Audit," *Educational Leadership* 41 (May 1984): 50–60.

[22]George A. Beauchamp, "Longitudinal Study in Curriculum Engineering," paper presented at the annual meeting of the American Educational Research Association, Chicago, 1974.

[23]Michael Langenbach, "Development of an Instrument to Measure Teachers' Attitudes Toward Curriculum Use and Planning," paper presented at the annual meeting of the American Educational Research Association, Minneapolis, 1970.

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use and planning. Teachers are asked to indicate the extent to which they agree with various statements such as:

- *Teacher creativity is bound to be stifled if a curriculum is used as a point of departure for teaching* (instrument item number 18).
- *The decision to use or ignore a planned curriculum should rest with the classroom teacher* (instrument item number 44).

The measure of reliability for this instrument was .79. The standard error of measurement was 6.6.

METHOD

The 488 participating teachers were categorized on two independent variables: locus of curriculum decision making and level of schooling taught. The three loci of curriculum decision making (district, school, and classroom) were determined through the use of the CDI and verified through personal interviews. The three levels of schooling were elementary, junior high, and high school. These nine groups (3 × 3) were treated descriptively because they were identified with a specific locus of curriculum decision making needed for this study and were not a random sample from their respective populations. The teachers were then measured on two variables: (1) teacher behavior regarding their schools' curriculums as measured by the TSAI, and (2) teacher attitudes toward curriculum use and planning as determined by the CAI.

DATA ANALYSIS

We determined means and standard deviations, as well as marginal unweighted means, for each group on the two independent variables. The means and standard deviations resulting from an analysis of the teachers' responses to the TSAI are shown in Figure 2. The results can be most clearly understood by examining Figure 3, which shows that the mean scores of junior high teachers in districts in which the locus of curriculum decision making is the district are different from the scores of junior high teachers in districts in which the school or classroom is the curriculum decision context. There are also differences between mean scores of junior high teachers in districts in which the locus of curriculum decision making is the district and the scores of elementary teachers in districts in which the school and classroom are the curriculum decision contexts. The scores of junior high teachers in districts that employ district curriculum decision-making processes are different from the scores of high school teachers in districts in which the locus of curriculum decision making is the classroom. In addition, the mean scores of elementary teachers in districts in which the classroom is the curriculum decision context are different from the scores of high school teachers in districts in which the school and district are the loci of curriculum decision making. Finally, the mean scores of elementary teachers in districts in which

Figure 2.
Means and Standard Deviations for Teacher Self-Analysis Inventory

Levels of Schooling	Locus of Decision Making			Total
	Classroom	School	District	
Elementary				
N	(10)	(50)	(122)	(182)
$\bar{X}$	114.6	128.8	133.0	125.5
SD	15.8	12.8	17.3	
Junior High				
N	(14)	(30)	(74)	(118)
$\bar{X}$	123.8	126.6	146.6	132.3
SD	20.0	15.0	20.0	
High School				
N	(6)	(34)	(73)	(113)
$\bar{X}$	119.7	133.9	133.5	129.0
SD	24.6	11.5	16.9	
Total				
N	(30)	(114)	(269)	(413)
$\bar{X}$	119.4	129.8	137.7	129.0

the classroom is the decision context are different from the mean scores of elementary teachers in districts in which the curriculum decisions are made at the district level.

The mean scores and standard deviations resulting from an analysis of the teachers' responses to the CAI are shown in Figure 4. The mean scores for teacher attitude regarding curriculum planning and use are lower in districts in which the school is the level of decision making than the attitude scores of teachers in those educational settings in which the school district is the locus of decision making.

DISCUSSION

In this study it was first necessary to identify school districts with different contexts of curriculum decision making. Then our purpose was to determine whether teachers' self-perceptions about their schools' curriculums, as well as curriculum use and planning, differed depending on the locus of curriculum decisions within districts. For the 488 study participants, curriculum development decisions about what will be taught, to whom, and in what order or sequence are made at either the district, school, or classroom level. For those teachers in districts in which the decisions were made at the school and classroom level, all teachers were *directly* involved in those decisions. In the two districts with a centralized process—curriculum decisions made by councils and committees—teachers were either directly involved in those decisions or had their views represented on a curriculum council and/or committee(s).

Our purpose was to determine whether teachers' self-perceptions regarding their behavior toward the formal curriculum and their attitudes toward curriculum use and planning differed depending on the locus of curriculum decision making within the school district.

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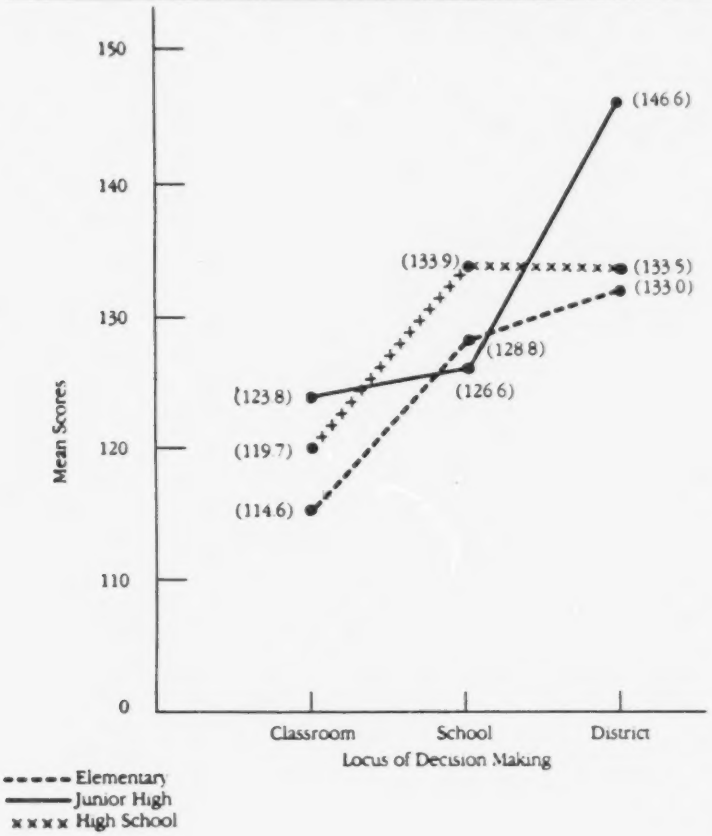
Figure 3.
Interaction of Level of Schooling with Locus of Decision Making on Teacher Self-Analysis Inventory



The most striking results were that teachers' self-reported inclination to follow or attend to curriculums formulated for their district, as measured by the TSAI, are highest when the district is the locus of decision making; next highest in districts in which the school is the decision context; and lowest when the classroom is the locus of curriculum decisions. Moreover, teachers' self-reported inclination to follow curriculums formulated for their district is markedly higher at all three grade levels—elementary, junior high, and senior high—when the district, rather than the classroom, is the curriculum decision-making context. When comparisons are made between the school and district decision context, teachers' scores are higher at the junior high level when the district is the decision context and only slightly higher for elementary

Figure 4.
Means and Standard Deviations for Curriculum Attitude Inventory

Levels of Schooling	Locus of Decision Making			Total
	Classroom	School	District	
Elementary				
N	(15)	(47)	(126)	(188)
$\bar{X}$	189.7	188.5	200.1	192.8
SD	15.3	14.5	17.4	
Junior High				
N	(13)	(28)	(80)	(121)
$\bar{X}$	193.1	186.0	198.5	192.5
SD	10.2	19.2	19.5	
High School				
N	(6)	(35)	(66)	(107)
$\bar{X}$	199.7	189.3	195.6	194.9
SD	15.8	15.9	18.2	
Total				
N	(34)	(110)	(272)	(416)
$\bar{X}$	194.2	187.9	198.1	193.4

and slightly lower for high school teachers. Interviews with teachers to verify the context in which curriculum decisions were made in their districts also revealed that junior high teachers had more intense concerns about the need for a planned curriculum than did teachers at other school levels. Elementary teachers tended to rely somewhat on adopted textbook series for direction; senior high teachers preferred to rely on their specialized knowledge.

The results of administering the CAI to measure teacher attitudes toward curriculum use and planning in their districts indicated a higher total mean score for teachers when the district is the locus of curriculum decisions, followed by a classroom and then school locus of decision making. Grade-level results showed that the mean scores of teachers are highest when the district is the locus of decisions for elementary and junior high teachers. High school teachers' self-perceptions of attitudes are more positive when the classroom is the decision context.

Our study results indicate that teachers' self-reported behaviors (and attitudes, although less so) regarding use of the formal district curriculums *are* associated with the context in which decisions are made. Reported behaviors had stronger, more consistent patterns than attitudes.

Previous research results indicate that there is a contradiction in teachers' desires to participate in curriculum decisions and their beliefs regarding the locus of these decisions. Our results indicate, however, that teachers have a greater inclination to attend to, and a more favorable attitude toward, formal curriculums when these decisions are made at the district level. For these teachers it appears that the district would be the appropriate locus of curriculum decision making and that their direct participation in these decisions is not a requisite for their attending to the curriculums that result from these decisions.

The reasons for these contradictions are difficult to explain. Our results may also be attributable to approaches to curriculum planning used in these school settings. For example, in those settings where the district was the locus of decision making, the centralized process employed was under the direction of a curriculum coordinator. In the four other districts curriculum leadership was provided by building principals and department heads. In addition, it was very evident during the teacher interviews to verify the locus of curriculum decision making in the six districts that, in those districts with a centralized development process, curriculum concerns were raised to a greater level of importance and visibility than was the case in the remaining four districts. The curriculum leadership that was provided, the greater visibility that curriculum decision making received, and expectations for uniformity in implementation in the two districts that employ a centralized process may influence teachers' self-perceptions regarding their attitudes and behaviors toward curriculum decision making.

These results indicate that teachers value curriculum decision making to different degrees depending on the context in which decisions are made within districts. More research needs to be done to separate out other factors, such as the quality of curriculum leadership and pre-service and inservice programs provided teachers. Factors such as these need to be considered before the generalizability of the results of this study can be determined.

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Bullough, Robert F., Jr.; Goldstein, Stanley L.; and Holt, Ladd. *Human Interests in the Curriculum. Teaching and Learning in a Technological Society*. New York: Teachers College Press, 1984, 145 pp., $13.95.

Critiques five programs—GEMS (Goal-Based Educational Management System), IGE (Individually Guided Education), AIE (Arts Is Elementary), EBCE (Experience Based Career Education), and SLSDSP (Salt Lake City's Democratic School Project)—in terms of their taken-for-granted orientations to show the constricting effect their "technocratic-mindedness" has upon the educational meaning available through the programs. The final chapter on "Education for Emancipation" projects an alternative vision.

Curriculum Development: Who Is Involved and How?

David S. Martin, Philip S. Saif, and Linda Thiel

The call for excellence in education for the 1980s raises numerous questions for the professional educator. For the curriculum specialist, a special set of questions arises.

- What curriculum changes are needed at the district level?
- Who at the district level should make decisions about curriculum development?
- Who should be actively involved in curriculum development?
- What are the advantages and disadvantages of having teachers participate in curriculum development?
- What roles should administrators and parents play in curriculum development?

To answer these and other questions, we conducted a national survey of curriculum development practices in the United States.

Curriculum Development Process Model

An assessment of the curriculum development practices of today's school districts is especially useful when some model exists with which to compare them. Our model for maximizing teacher involvement in curriculum development requires a gradual implementation over a two- to three-year period. It involves ten steps.

1. A teacher committee meets to write a rationale and objectives for the curriculum; members then solicit feedback from peer teachers in their schools.
2. The committee revises the rationale and objectives based on this feedback and proceeds to develop student activities. Subcommittees may take responsibility for different groups of activities and then critique each other's work.
3. Subcommittees recommend materials and evaluation methods. The entire committee again solicits feedback from peer teachers on these products.
4. Committee members identify and briefly train pilot teachers who agree to test the curriculum and provide feedback based on implementation.
5. A new teacher committee is formed (with some members from the previous committee) to collect and evaluate the pilot-test data.
6. This second committee revises the curriculum based on pilot-test results.
7. The revision is brought forward to the administration and school board for final adoption.
8. The pilot teachers become a core group of trainers of other teachers who will implement the curriculum. (Preferably, there is one pilot teacher from each of several schools, so this training can be decentralized.)
9. A third committee may be formed (again composed of some members from either of the two previous committees) to carry out final revisions based on the year-long pilot test and to monitor the implementation itself.
10. Higher-level training, using the pilot teachers as catalysts, is conducted for teachers who are experienced in the new program to keep the curriculum vital.

This process is continuous, taking up to three years, and involves a large percentage of the teachers who will be expected to use the developed curriculum. This model was built on the work of Miel (1946), Pritzkau (1959), and others, who established the case for a slow but deliberate process of

locally based curriculum development designed to strengthen teacher commitment to implementing change.

The Survey

To help us answer the fundamental question, "To what extent is such a high level of curriculum development really carried out in American public schools?" we developed, administered, and analyzed a survey of curriculum directors or administrators in public school systems. The 12-item instrument (see fig. 1) surveyed processes used at the local school district level for curriculum development or revision. Items were based on current practice and focused specifically on the level of involvement of various personnel.

All questionnaires were coded for ethnic composition of the school system, size of the school system according to the number of students enrolled, dollars spent per pupil, and type of school system (urban, suburban, or rural) for each recipient selected at random. Table 1 provides a profile of the characteristics of the responding districts. The survey was sent to 200 districts of which 91 responded. Responses for each survey item were tabulated across the total group. A content analysis of narrative sections, particularly those relating to the local curriculum development process, was carried out. We also examined the fit between responses and our own curriculum development model.

The Results

The completed survey provides a picture of curriculum development in American public schools today.

1. *Curriculum master plan.* More than two-thirds of the districts reported having a master plan for curriculum development. In 60 percent of these districts, the plan was initiated by an assistant superintendent. Less frequently, it was guided by a director of curriculum or instruction.

2. *Areas of curriculum development.* All respondents except one indicated that they had been involved in developing curriculum. These districts reported that approximately six curriculum areas had been developed or revised during the past five years. We found no relationship between the size of the school district and the number of curriculum fields that were developed.

The major subject areas—language arts, mathematics, science, and social studies—were the most frequently developed or revised. The actual subjects and courses listed by the respondents were classified as shown in Table 2.

Number of students in your school system: _____
Your position title: _____

1. Some school districts try to have a 3- to 5-year plan for curriculum revision in their district.
   a. Do you have such a master plan for curriculum development?
      _____ yes _____ no
   b. If yes: What is the title of the person under whose leadership it was developed?
      _____
   c. In your district, have you been involved in developing curriculum?
      _____ yes _____ no

2. How many curriculum subject areas, if any, were developed or revised during the past 5 years? _____
   Please specify which ones:

3. *Briefly* list the steps you normally take in your district for developing curriculum:

4. To what degree did each of the following constituencies participate in the curriculum development process? Please circle only one in each line:

	Not at all	Very little input	Some input	Heavily involved	Not applicable
Community Representative(s)	0	1	2	3	N/A
Board of Education	0	1	2	3	N/A
Superintendent	0	1	2	3	N/A
Assistant Superintendent	0	1	2	3	N/A
Director of Curriculum	0	1	2	3	N/A
Principals	0	1	2	3	N/A
Assistant Principals	0	1	2	3	N/A
Heads of departments	0	1	2	3	N/A
Supervisors	0	1	2	3	N/A
Teachers	0	1	2	3	N/A
Teacher Aides	0	1	2	3	N/A
Parents	0	1	2	3	N/A
Students	0	1	2	3	N/A
Consultant(s)	0	1	2	3	N/A
Other: _____ (Please specify)	0	1	2	3	N/A

5. From your experience, who *should* be involved in the curriculum development process? (You may check as many as apply):

   _____ Administrators
   _____ Supervisors
   _____ Teachers
   _____ Students
   _____ Board of Education
   _____ Parents
   _____ Community representatives
   _____ College professors
   _____ Independent consultants

6. Please rank the following items on their effectiveness for changing curriculum. 5 represents the highest rank; 1 represents the lowest.

   _____ Buy a curriculum from a commercial company.
   _____ Ask a college professor of curriculum to do it.
   _____ Hire a consultant.
   _____ Use a curriculum that was tried in another school district.
   _____ Do it yourself.

Fig. 1. Gallaudet University Curriculum Development Process Survey

using the 1981 Classification of Instructional Programs developed by the National Center for Education Statistics.

Uniformly high effort was directed at developing or revising language arts and mathematics curriculums by school districts of all sizes. The larger the district, however, the more often the science curriculum was revised. Fifty-six percent of the small districts worked on the science curriculum, compared to 64 percent of medium-sized districts and 73 percent of large districts. Conversely, smaller districts most often cited low-incidence subjects, which we grouped into the "other subjects" category. Sixty-one percent of small districts worked on "other" curriculum fields, compared to 49 percent of medium-sized districts and 35 percent of large districts.

3. *The curriculum development process.* We asked the districts to describe how their schools developed curriculum. The most frequently mentioned activities included:

- assessing needs, including involvement of teachers through some type of survey (52 percent);
- allocating resources, including the establishment of curriculum committees (68 percent);
- establishing a scope and sequence (48 percent);

7. **Based** upon your experience, do you favor using committees in curriculum development?

_____ yes _____ no

If yes, what is the ideal number of members on a curriculum committee: ___ ___
Composition of committee (e.g., teachers, parents) _____

If no, what is your rationale? Please check as many as apply:
_____ Committees do not produce what is intended.
_____ Committees tend to be a waste of time.
_____ People involved do not have the expertise or adequate background.
_____ A committee is difficult to manage.
_____ Other: _____

8. Which of the following do you favor?

_____ A national curriculum
_____ A local curriculum
_____ A state curriculum
_____ Other: _____ (please specify)

9. Whose responsibility is it to ensure that a new curriculum is *implemented* after it is developed?

_____ The school principal
_____ The teacher
_____ The director of curriculum
_____ Other(s) _____ (please specify)

10. From your experience, how do you know that a curriculum is being properly implemented? *Briefly* state your opinion.

11. Some school districts favor a quantitative or statistical evaluation of curriculum, while others favor qualitative, descriptive evaluations.

Briefly, where do you stand in regard to this issue?

12. General comments about effective curriculum development processes:

Check One:

_____ I would appreciate a summary of the survey results; my name and address

_____ I am not interested in receiving a copy of the survey results.

"We have no evidence of a decline in the use of textbooks, but commercial curriculums apparently are not used as the foundation for curriculums developed locally."

• evaluating curriculum (43 percent), and
• obtaining administrative approval (35 percent).

It is troubling but not surprising that few of the districts reported using prior empirical research to shape the curriculum being developed (2" percent). In addition, few districts took the time to write a philosophy (18 percent) or to pilot the new curriculum (12 percent).

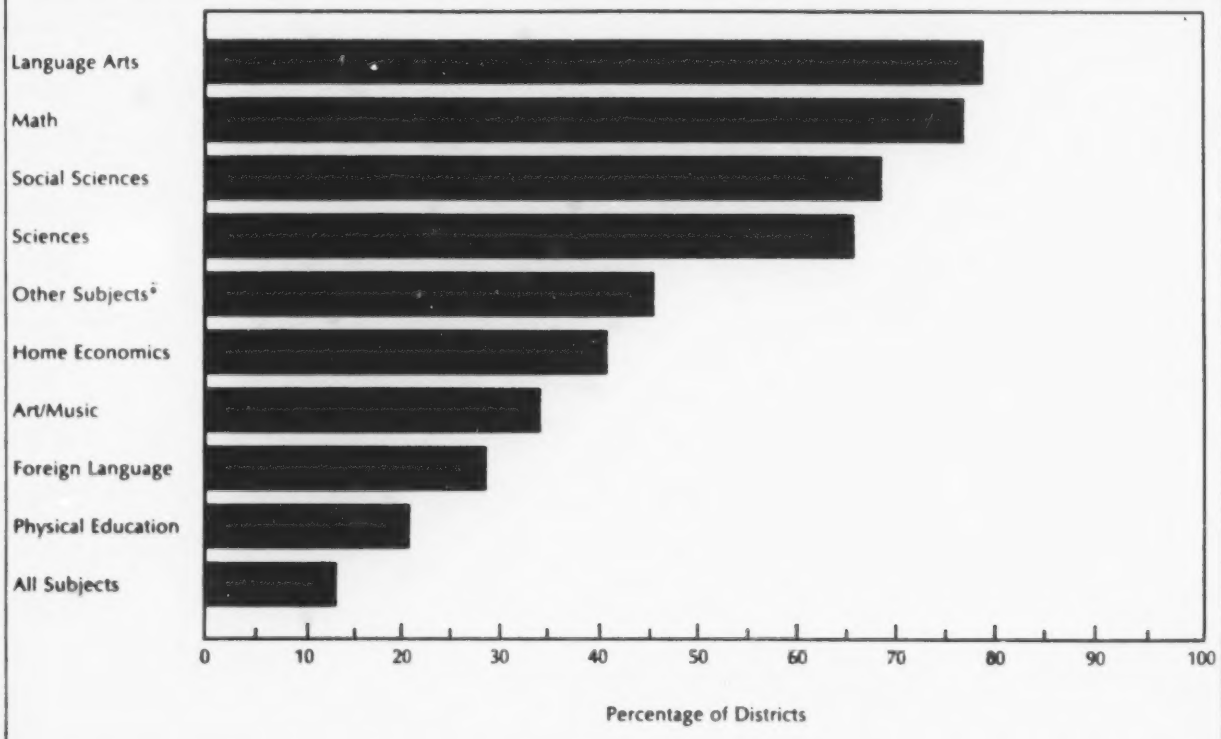
Table 1
Characteristics of Survey

Sample	200 school districts
Returned surveys	91 school districts
District size	30 percent—6,000+ students 50 percent—4,000 to 6,000 students 20 percent—less than 4,000 students
District location	45 percent—suburban 40 percent—rural 15 percent—urban
Average minority population	16 percent

4. *Constituency participation in curriculum development.* We asked the districts to indicate the degree to which different constituencies actually participated in curriculum development. In a follow-up question, we asked them to indicate which constituencies should be involved. The responses to these paired questions provided a way of comparing curriculum specialists' theories with practice.

Table 3 shows the average degree to which each constituency was involved in curriculum development. Heavy involvement was reported for instructional professionals and directors of curriculum. Assistant superintendents and principals also had a great deal of involvement. Community-based constituencies, especially parents, had less input. Students, on the average, had little input, and teacher aides almost none.

Table 2
Percentage of School Districts Reporting Development or Revision of Curriculum Areas over the Past Five Years



*Includes career education, study skills, media, business, typing, computers, vocational, driver education, humanities, psychology, industrial and practical arts.

Table 3
Degree of Participation in Curriculum Development by Major Constituencies

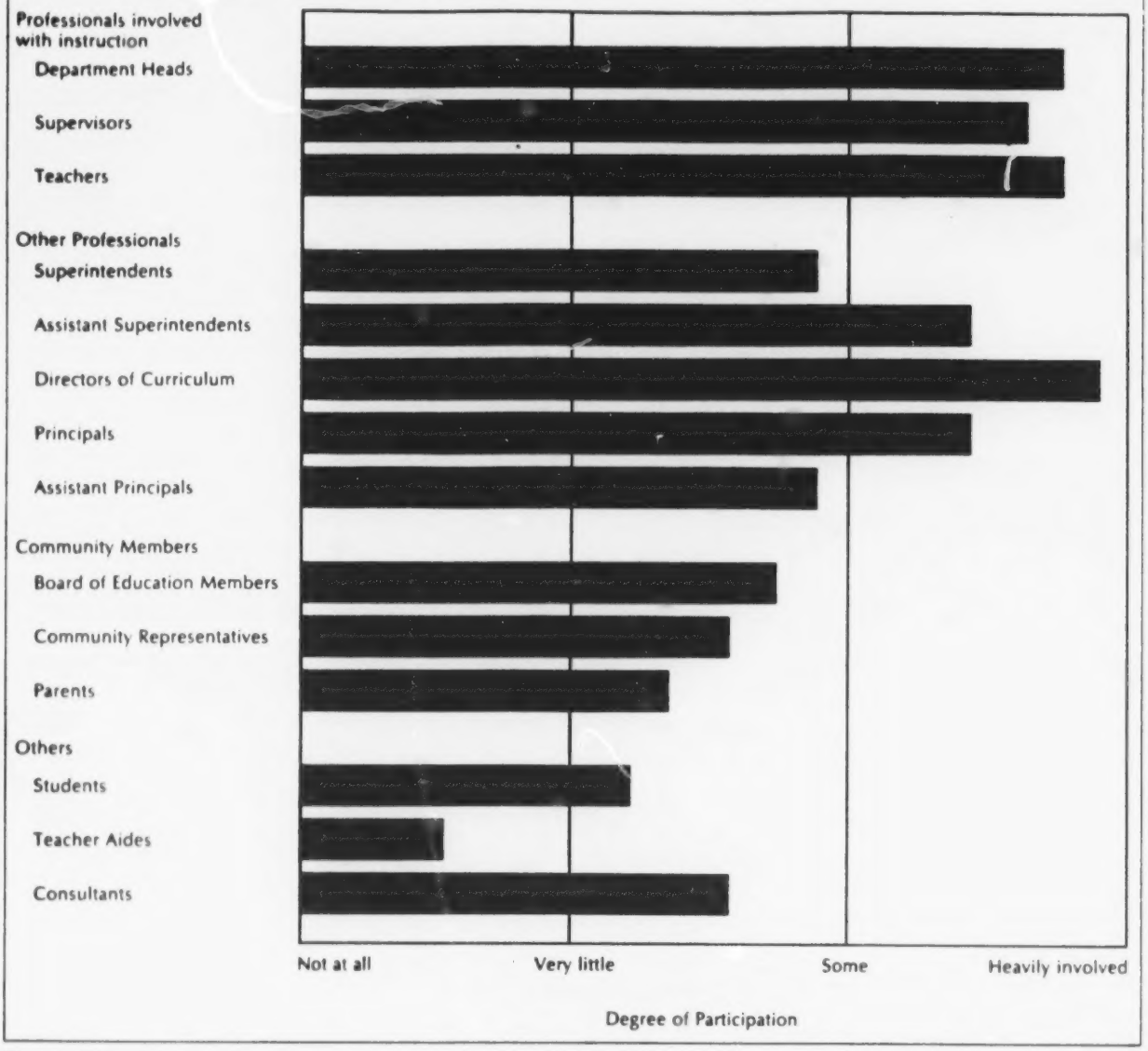


Table 4
Average Rankings of Effectiveness of Modes of Curriculum Change

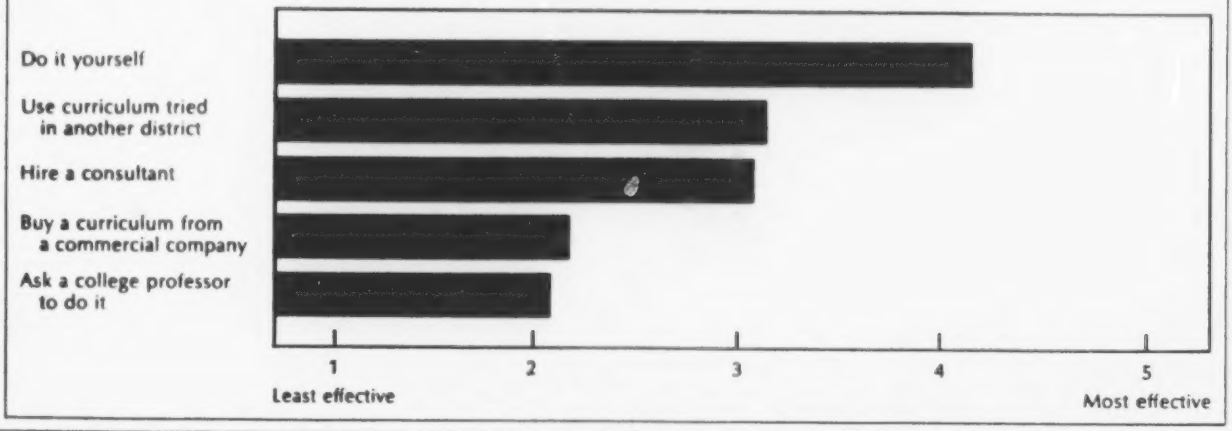


Table 3 also indicates that at least two-thirds of the respondents thought that administrators, supervisors, teachers, students, the board of education, parents, and community representatives should be involved in curriculum development. About half thought that independent consultants should be involved, and about one-third that college professors should participate. While there appears to be support for some degree of involvement by a wide range of constituencies, the degree of involvement supported by administrators remains undetermined.

All constituencies—teachers, students, parents, community representatives, and boards of education—showed higher rates of participation in districts that supported such involvement. Respondents' rather high support for parent involvement may be attributed to their need to obtain community support for curriculum revision and requires further study.

The universal involvement of teachers in curriculum development is significant, although the survey does not reveal the actual quality of their involvement. We found no relationship between the extent of teacher involvement in curriculum development and the size of the school system, the type of educational setting, the percentage of minority students, or dollars spent per student.

5. *Preferred strategies for curriculum change.* We asked the districts to rank the effectiveness of five different ways of bringing about curriculum change. Table 4 indicates that the highest mean ranking (4.2 out of a possible 5.0) was assigned to "do it yourself." "Use a curriculum that was tried in another school district" and "hire a consultant" were ranked moderately high as effective change strategies (3.2 and 3.1, respectively). "Buy a curriculum from a commercial company" was ranked relatively low (2.3), as was "ask a college professor of curriculum to do it" (2.1). However, these last two responses indicate that a large minority of respondents do favor curriculum adoption using the work of some outside agency.

Respondents were asked if they favored national, state, or local curriculums (we asked about national curriculum to find out whether the respondents favored development of a national curriculum, although none exists now); 84 percent chose local. This choice is consistent with "do it yourself" as the favored strategy for effecting curriculum change. Nearly 25 percent of the respondents favored a state curriculum, but only 1 percent favored a national curriculum.

Curriculum Development at The Center for Learning

TAP, Teachers/Authors/Publishers, is a 15-year-old network of master teachers and professional writers who team up at annual workshops to create high-quality curriculum materials. TAP publications are used widely throughout the United States, Canada, and Australia.

TAP is sponsored by The Center for Learning, a nonprofit corporation funded largely by grants, donations, and sales. Providing fellowships and secretarial and editorial assistance, the Center brings together approximately 40 teacher-authors each summer at John Carroll University in Cleveland, Ohio. TAP's primary goal is to enable practicing teachers to become published authors of exemplary curriculums that overcome textbook limitations and enable teachers to become more effective. The Center's board of directors is ecumenical, and the TAP materials are appropriate for public as well as private schools.

The Center's philosophy, integral both to the process and product, is that a classroom cannot be a values vacuum. The TAP teacher-authors endorse this philosophy and express specific values throughout the five published series. These values reflect the diversity of the United States, and the Center network exemplifies that unity amid diversity is not only possible but made stronger when universals are probed respectfully.

The TAP language arts curriculum for grades 9–12 comprises 25 units, including, for instance, Experiencing Shakespeare I and II; Speech; American Literature I and II, English, and World Literature; Tools of Nonfiction; and Advanced Placement Composition. Social studies for junior high include two units in U.S. History for grade eight and one Geography/World Cultures unit for grade seven. High school social studies include from two to four units each of Advanced Placement U.S. History, Economics, U.S. Government, U.S. History, and World History.

The Center is currently involved in a two-year project to develop basic skills units. Aided by grants from the Cleveland Foundation and the George Gund Foundation, the Center is piloting the units and an inservice program in 20 Cleveland public schools. To be refined by the TAP teacher-authors, these materials are scheduled for publication in 1988.[1]

Plans for the future include additional units, cyclical revisions of all series, and inservice programs. Last fall the Center started a Social Studies Newsletter, which is being followed this autumn by an English Newsletter.

Through these formal means of communication and participation in the annual workshops, TAP teachers are able to use their own knowledge and experiences to create a grass-roots organization that is dedicated to the development of exemplary curriculum materials.□

1. Materials that are written for use in all schools, public and private, are distributed by W. C. Brown Publishers, 2460 Kerper Blvd., Dubuque, IA 52001 (phone: 1-800-922-7696). Other materials, written specifically for Catholic schools and parishes, are available directly from the Center for Learning.

—By Rose Schaffer, H. M., Executive Director, The Center for Learning, 20770 Hilliard Rd., Rocky River, OH 44116.

What Franklin Bobbitt Might Say
If He Could Only See Us Now

To all you stalwart schoolmen
And the factories you run;
To all you frazzled teachers and
The "frills" you've learned to shun;

To the planners and researchers
And their scientistic schemes:
Congratulations! Thank you! You've
Surpassed my wildest dreams!

I applaud your test-tube language
And your number-covered forms,
Your units of performance, your
Standards, and your norms.

I celebrate your objectives, so
Behavioral, so complete.
I love the way your test results
Make knowledge look so neat.

Distar? Workbooks? M.B.O.?
I never had such tools.
I dared not hope technology
Could so control the schools.

I like those curriculum engineers:
Bereiter, Mager, and Popham,
With "Back to the Basics" and ETS.
There's not much left to stop 'em.

Your direct instruction, contracts,
And curriculum in carts;
Your labels and your tracking,
Your Apple data charts—

It's all shown me how much I lacked,
How much I didn't know.
How I could've used it all,
Those many years ago.

You've scientized the whole shebang!
Efficiency? You employ it.
Just one thing still bothers me:
Why don't the kids enjoy it?

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All 91 responding districts favored curriculum development by committee. The average preferred committee size, 10 persons, was not related significantly to the size of the district. Nearly all of the respondents favored teacher membership on these committees, more than three-fourths favored participation by administrators, and half favored parental involvement.

The low average rate of actual parent involvement in curriculum development contrasts with apparent general support for parent participation, particularly on curriculum committees. Parents had little input into the curriculum process in 88 percent of the districts.

Of those districts that believed parents should participate, more than half reported that parents were either heavily involved or had some input. (The survey inquired about the degree of parent involvement but not the actual nature of their participation.) Findings suggest that significant parental involvement in curriculum development exists only where it is actively supported by the schools, and further that the nature and degree of this participation varies from district to district.

We found significant involvement of the school principal, although not as high as that of teachers. Recent literature in the field of curriculum change (e.g., Berman and McLaughlin 1978) indicates that building-level commitment by principals has been a key to successful institutionalization of program change; results of our survey appear to confirm this research.

6. *Curriculum implementation.* We asked the districts to tell us whose responsibility it was to ensure that a new curriculum was implemented. Nearly all respondents (89 percent) agreed the primary responsibility rested with the principal. However, about half of the respondents indicated that teachers and directors of curriculum had responsibility for implementation. This point should stimulate school districts to reexamine the potential of combined leadership in curriculum development.

We also found that, statistically, the higher the frequency of teacher involvement in implementation, the higher the frequency of curriculum director involvement. However, no significant relationship was found between principals' and teachers' responsibilities. From these findings we can hypothesize two patterns of implementation: one at the building level guided by principals, and one at the district level possibly coordinated by a director of curriculum.

With an open-ended question, we asked the districts to indicate how they could tell if a curriculum is being properly implemented. More than 70 percent reported that they relied on classroom observations by supervisors or principals, a view consistent with the perception that principals are largely responsible for curriculum implementation. Forty percent said they relied on standardized test results, nearly 30 percent reported using meetings or teacher lesson plans to judge success of implementation. Most districts relied on more than one method.

7. *Curriculum evaluation.* We asked the districts whether they favored qualitative (descriptive) or quantitative (statistical) evaluations of curriculum. Sixty-two percent favored both. About a quarter favored only qualitative evaluation information, while only 13 percent favored a quantitative approach alone. This may be interpreted in at least three ways: either quantitative methods are not commonly understood, or a new evaluation trend stressing qualitative approaches is taking effect, or school districts tend to prefer more informal measures of success over objective test instruments. Clearly, more study is needed here.

8. *Comments.* Content analysis of the unstructured comments section indicated that most respondents supported "teacher ownership" of curriculum—again consistent with the results of items four and five. Comments included the following:

"Teachers need to be involved right from the start."

"If teachers don't feel committed [to the change], no one else will."

"I can't imagine trying a change in curriculum without getting the teachers to participate in the decision."

Of equal weight, however, is the call among the respondents for both periodic updating of curriculum and for administrative support for teachers implementing change. This endorsement of administrative support for curriculum development also is consistent with the response for item 5.

Implications of the Results

Assuming that this random sampling of school systems in the U.S. yielded an honest profile of current practice, the following inferences from the results may be useful to curriculum leaders and to students of curriculum development.

1. Basic core subjects (language, reading, and math) are still the focus of systematic curriculum development efforts at the local level.

2. A large proportion of school districts, perhaps due to the leadership of those responsible for curriculum development and revision, recognize the importance of systematic curriculum development, as opposed to the rapid, wholesale adoption of prepared curriculum.

3. The heavy involvement of teachers within curriculum committees appears to characterize school districts that develop curriculums locally. However, the model we developed and presented earlier calls for widening circles of teacher involvement over several years; that model currently does not appear to be in use on a wide scale.

4. Districts involved in curriculum development make little systematic use of prior research.

5. The development of a philosophy for the curriculum appears to have a low priority.

6. Evaluative instruments are rarely used to refine the curriculum objectives for a new locally developed curriculum.

7. The active participation of building administrators (principals and supervisors) is a feature of the curriculum development process in many school districts. This involvement may be an implicit recognition of the importance of administrative support in institutionalizing a curriculum change.

8. We have no evidence of a decline in the use of textbooks, but commercial curriculums apparently are not used as the foundation for curriculums developed locally. Students of curriculum have long known that adopted curriculums often differ from what teachers actually teach. Further study is needed, however, to learn whether districts develop local curriculums to match a published series or purchase material that fits their own curriculum specifications.

"Respondents were asked if they favored national, state, or local curriculums; . . . 84 percent chose local."

A sizable minority, however, would prefer to purchase a commercial curriculum (see table 4); possible explanations here would include lack of funds for local development, lack of trained curriculum leaders, interest in measuring teacher performance against some external "standard," or the conviction that a local school district cannot develop a complete curriculum that can compete with tested, high-quality commercial materials developed by well-financed publishers.

9. Nearly half of the respondents affirmed the importance of a balanced evaluation design. Many curriculum writers (e.g., Eisner 1979) have expressed concern about the exclusive use of quantitative evaluation. Perhaps these writers and conference speakers, along with training programs for curriculum leaders, may be having some positive effect; alternatively, we might infer that many school districts are satisfied with more informal judgments of the success of a new curriculum. Again, further study is needed.

10. The frequency of the comment about the importance of teacher ownership in curriculum development is also evidence that top-down models are inadequate for bringing about meaningful and lasting curriculum change. This inference, again, deserves further investigation.

11. The relationship between development and implementation apparently is not clearly defined in many districts. The process of curriculum development has multiple steps that usually culminate in a product. At that point, curriculum implementation, also a multistep process, begins. These two processes should be seen as a continuum, with implementation smoothly following or even overlapping slightly with the curriculum development stage. They both should involve many of the same professional personnel to assure this continuity, as illustrated in the model presented earlier. However, curriculum development and implementation are in fact often carried out separately; frequently leaders from a central office (with or without teacher involvement) develop curriculum, and then teachers and principals implement it. Curriculum leaders should strive to create a continuum that ensures consistency.

Our representative sample of curriculum leaders indicates that the trend is to involve teachers broadly in curriculum committees. Time and additional research will answer the larger question of how deep and lasting this development will be, particularly in the face of shrinking school budgets. The challenge for American curriculum leaders is to maintain and enhance the teacher-ownership model with its requirement for large investments of time, and to resist the temptation to surrender curriculum decisions to outside forces, both at state and local levels.□

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Los Angeles Aligns Instruction with Essential Skills

When instruction and assessment focus on stated objectives, the effects of schooling are understandable and impressive.

FRED NIEDERMEYER AND STEPHEN YELON

The Los Angeles Unified School District, like many other districts, recently developed a K-6 continuum of essential competencies in reading, language, and mathematics, and instituted a yearly survey of these essential skills at each grade level. The nationwide trend to define, assess, and report basic competencies recognizes that traditional norm-referenced achievement tests are rather insensitive to the effects of classroom instruction, and that grade level competency tests provide a more accurate and useful picture of a student's accomplishments.

Defining and testing essential skills does not, however, result in improved instruction and higher student achievement. It has been documented that teaching to defined objectives is quite different from simply covering text material and that teachers need considerable help and support in adjusting their instruction.[1] So in collaboration with the Southwest Regional Laboratory for Educational Research and Development (SWRL), the Los Angeles schools initiated a Curriculum Alignment Project.

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Curriculum Alignment

A curriculum is composed of objectives, instruction, and assessment. When all three match—that is, instruction and assessment focus on stated objectives—then the effects of schooling are usually both understandable and impressive. When these three elements are not aligned—that is, district curriculum guides state one thing, classroom instruction focuses on something else, and standardized tests reflect neither—then the effects of schooling are difficult to determine and therefore difficult to improve.[3]

By instituting its grade level continua of basic objectives and its yearly surveys of these skills, the Los Angeles Unified School District matched assessment with objectives. The goal of the project described here has been to align classroom instruction, the third part of the curriculum, with the other two.

The Curriculum Alignment Project began in the spring of 1979, concurrent with the first yearly Survey of Essential Skills (SES) test at each grade level in all of the district's 435 elementary schools. The SES results showed considerable proficiency on the part of the district's pupils but also showed that many children had room for improvement. If teachers were to plan and conduct instruction for the following school year in the same way they had in the past, there would be little reason to expect marked increases. So we asked, "What can teachers do better or differently so that more pupils will acquire the essential competencies defined on the continua?"

The three-year Curriculum Alignment Project began with SWRL staff working with two low-income area schools, one in south-central and one in east Los Angeles. The student population of one school was nearly all

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black and the other nearly all Mexican American. The first task was to find out what principals and teachers at these schools needed to do to effectively align their instructional programs with the district's continua so that inservice materials and other resources could be developed that would allow the district to implement the curriculum alignment process in additional schools.

Curriculum Alignment Process

Traditionally, teachers managed to group and place students for textbook instruction and cover as much ground as time allowed before the end of the school year. Because standardized testing produced little of the information needed by teachers to plan instruction, there had been little on which to base evaluation and improvement of instructional programs.

Now, however, the game has changed. Teachers are directed to teach a list of essential competencies for which the district will test students at the end of the year. In order to teach these competencies at acceptable levels, teachers need the principal's assistance and support and help with the following tasks:

1. *Matching instructional materials and activities with essential skills.* When teaching specified competencies, teachers may need more than a single text. When using only one text, several essential skills may not be covered (most textbooks are full of information that is "nice to know"). In addition, few classes can complete a year's worth of text material in a school year. Since pupils tend to learn what they practice, there is little hope that pupils will do well on competencies for which they receive little or no instruction.

We found that teachers want help identifying where continuum skills appear in their textbooks. If textbook and continuum skills are correlated, teachers can be sure to see that these skills are taught during the year. Teachers also need help locating or developing instructional materials and activities on the continuum skills that are not adequately addressed in their textbooks. Developing these resources is a considerable task. Continuum-to-text correlation charts and supplementary instructional materials require analytical expertise, as well as a great deal of time to prepare.

Many publishers provide correlations for their texts. However, their charts commonly identify skills and then list page numbers where the skills are developed. To supplement these materials, we devised a correlation chart that lists the units and pages in a text and the essential skills taught and the grade level at which they will be tested. A teacher can use the publishers' charts for considering a skill and the resources available to teach it, and can use the district's chart for considering how to proceed through a particular text: what to emphasize, what to go over lightly, what to skip, and what to add.

2. *Developing a year-long instructional plan.* We found that teachers want help in selecting and scheduling instructional units so that all necessary competencies will be taught during the year. There simply isn't enough time to teach *everything*. It is important for teachers to locate the basic competencies in their materials and then schedule when instruction on them will be completed during the year. By scheduling instruction in this way, teachers are able to look closely at what can be taught in the time available and be realistic about accomplishable expectations. Research has shown that year-long planning can result in greater pupil achievement by ensuring that more instruction will be provided.[3]

One resource useful to teachers during this planning is the district's *Survey of Essential Skills (SES) School Report*, which summarizes pupil performance by individual pupil and by grade level on the previous year's test. For example, by looking at the average score of each skill for fourth graders during the prior year, a fourth grade teacher can see which skills were taught well and which skills deserve extra time and instruction this year. Although some teachers had trouble seeing the relationship between last year's scores and this year's planning ("Yes, last year's fourth graders did poorly on fractions, but I have a new bunch of fourth graders this year"), most agreed that poor performance last year could mean that the teacher needs to improve instruction in that particular area this year.

3. *Developing a weekly schedule.* Teachers develop weekly schedules, for example, reading from 9 to 10 Monday through Thursday, math from 11 to 12 daily, social studies from 1:30 to 2 Wednesday and Friday. In the Curriculum Alignment Project, we found weekly schedules useful in two ways. First, the district did not want teachers to spend all of their time teaching only basic proficiencies in math, reading, and language. Nor did the teachers want to do that. Weekly schedules provided a mechanism for planning a balanced curriculum.

Second, planning weekly schedules is related to selecting instructional content and scheduling units throughout the year. When attempting to develop a weekly schedule, teachers discovered there wasn't enough time to teach all of the desired content in all of the subject areas, separate and distinct from other subjects, to all of their groups of students. Thus, efficient use of time through integration of subjects such as reading and social studies was important.

Even when there is a mismatch between the time required and the time available, most teachers still try to fit everything in. Consequently, many students do not receive adequate instructional time with the teacher.

In the Curriculum Alignment Project, we have tried to find ways to help teachers develop realistic weekly schedules. For example, workshops on planning at the beginning of the school year help teachers use the following methods to adjust their weekly schedules so that the time required for instruction is equal to the time available:

- Teachers used the listing of continuum skills and the previous year's test results to emphasize the most important sections of texts and other materials (as opposed to the entire text). As a result, teachers often found that they needed less time for certain subjects than was originally planned.
- Teachers formed the number of instructional groups that allowed them to give pupils sufficient time. For example, forming two or three reading groups was more effective and efficient than forming four or five. Teachers were encouraged to avoid "over-grouping."
- Teachers traded certain pupils with other teachers for particular subjects so that they could conduct one group instead of two.

4. *Teaching toward competencies.*

The first three activities described here have to do with planning for competency-based instruction. But more than planning is needed. Researchers have identified teachers' classroom behaviors that can greatly influence the amount of learning that takes place; many of these behaviors are summarized in current literature.[6] For example, research strongly suggests that teachers need to provide pupils with ample practice of the required competencies, and they need to help pupils correct any inappropriate responses. Some of the activities in the Curriculum Alignment Project have focused on these procedures. For example, during inservice meetings, teachers learned how to provide practice in consistently weak areas, and they participated in exercises to help assess progress in these areas.

5. *Monitoring and improving progress.* Teachers want help during the school year in completing the planned instruction and in monitoring and improving the progress of their classes in attaining the competencies. The unit completion goals set during activity two are a convenient mechanism for principals to keep track of progress during the year. When a class falls behind projected completion dates, the teacher and principal must find ways to improve the situation.

The teacher may need to form fewer groups of pupils, or spend more time on a particular subject, or even rethink what can be accomplished during the year. The teacher may need to modify an instructional strategy or provide better conditions for motivation. The principal needs to keep informed of the progress of each class and help the teacher accomplish the goals planned for the year. Monitoring progress, sometimes called outcomes-based supervision, has been demonstrated to result in higher pupil achievement.[5]

Curriculum Alignment Resources

To successfully align their instruction with a district's list of competencies, teachers need help from principals with the preceding activities. In the Curriculum Alignment Project, principals receive help, too, in the form of well developed materials that they and teachers can use to conduct the curriculum alignment process.

A School Curriculum Alignment Kit is being developed for the district's elementary schools and will be more widely implemented during the coming school year. Primarily, the kit consists of a Coordinator's Guide describing the inservice activities that should be held with teachers throughout the year to help them:

- Use the Survey of Essential Skills (SES) results to detect strong and weak competencies and to place and group pupils
- Relate the continua to present texts and materials
- Plan and schedule instruction on a weekly, semester, and yearly basis so that all essential skills are covered
- Improve instruction depending on the school's need, for example, to integrate essentials into other subjects or to deal with children below grade level
- Assess mid-year progress and plan remaining instruction.

The other components of the kit, to be used in inservice, are:

- Correlation charts which list in page order all the skills covered in a specific textbook and show which skills are continuum skills and at what grade level they are to be assessed. Continuum skills at a specific grade level that are *not* covered in the textbooks are also listed.
- Practice items for all continuum skills at each grade level, written in the format of the SES. These items, which provide SES practice, can be used for instruction or can be made into mini-unit or mid-year tests.
- Class Progress Sheets at each grade level for each subject. These sheets list the skills to be assessed at that grade level and have columns to be checked when the skill is taught and when tested.
- Teacher worksheets for yearly goal setting.
- Teacher worksheets for weekly scheduling.
- Forms and scales for monitoring class progress, observing instruction, and identifying and remediating instructional problems.

The Curriculum Alignment Project is developing methods and resources that elementary school principals and teachers can use to teach essential skills. The project is now under way in ten schools and will be implemented in more schools next year.

It is our belief that schools can effectively teach essential skills to all students.[6] We also believe that the Curriculum Alignment Project is one effective way to achieve that goal, that is, to enable children to learn the essential skills identified for each grade and subject. We are not alone in our belief. In a report to the judge in the Los Angeles School Desegregation Case, consultants said that the Curriculum Alignment Project: ". . . is now one of the most promising efforts to improve big city schools in the United States."[7] ■

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CURRICULUM: THE BASIS FOR INSTRUCTIONAL LEADERSHIP THE PRINCIPAL'S ROLE

by
Carmelo V. Sapone

Recent literature[1] has focused on the importance the school principal has in demonstrating instructional leadership within a school. Prominent within this leadership role is the principal's professional preparation and experiences, and the provisions the principal makes in clarifying the role expectations held relative to the total operation in the school's instructional area. This leadership role should demonstrate positive images and influences and should help shape the direction that any effective school should pursue. Yet, in spite of the overpowering research literature on the influence that effective principals demonstrated, many principals are perceived by their staff, their administration; and their community as being maintenance oriented managers, i.e., focusing on the day-to-day tasks that may have little influence on the quality of education. As important as these maintenance functions might appear, administratively, their achievement are more central to administration requirements than to perceptions of quality education and increased student achievement as perceived by teachers and parents. In accomplishing what may be perceived as low-level managerial tasks, the effective principal can negate his priority role, i.e., enhancing the instructional leadership of the staff as it impacts on students' achievement.

Bloom[2] has provided a model of "mastery" learning that can and should form one of the basis for most curriculum improvement. It has been demonstrated, through extensive research, that most students can learn what the schools have to teach, and, in fact, do learn using the "Mastery-Learning" approach. Teachers, using Bloom's model have demonstrated more effective teaching and learning. The quality of the school curriculum and student learning increases proportionally with the understanding, training, and implementation of the "Mastery-Learning" Model.

Tyler[3] has provided one of the most powerful models for curriculum development and instruction. He presents four fundamental questions which must be answered in developing any curriculum and plan of instruction. Principals could use these questions as a basis for curriculum reform. They are:

> "1. What educational purposes should the school seek to attain?
> 2. What educational experiences can be provided that are likely to attain these purposes?
> 3. How can these educational experiences be effectively organized?
> 4. How can we determine whether these purposes are being attained?"

Downey[4] has influenced the field of education with his curriculum model entitled *Secondary Education: A Model for Improvement*. His model presents and discusses the educative process in three basis components: (1) Substantive Dimension (The things to be taught), (2) Procedural Dimensions (The dynamics of the process), and (3) The Environmental Dimension (The prevailing conditions).

The Association for Supervision and Curriculum development[5] has published a viable model for curriculum developers. Their model published in their book entitled *Measuring and Attaining the Goals of Education* should provide meaningful dialogue for those interested in improving the quality of education, especially for the school principal who should, in practice, be the instructional leader in the school system.

This author maintains that any school can

increase school efficiency and effectiveness if the school principal demonstrates curriculum and instructional leadership. It should make little difference as to which model is used. What is important is consistency in the use of a total curriculum plan/model as developed and implemented within the school and as advocated and endorsed by the staff and school principal. This article will present one model that can be used to improve the curriculum and instructional process; curriculum effectiveness; and curriculum evaluation as it relates to increased student achievement.

Chart I presents an overview of one curriculum development model that can be used to insure and account for quality education to the various school consumers. This model, as may be advocated by the school principal, establishes, on a priority basis the instructional goals of the total school's curriculum. Goals, as used in this article are "end" results. This is what the school attempts to accomplish in the total school curriculum. Criterion to each goal (Stage II) are a set of learning/performance objectives that relate specifically to the attainment of each goal. Objectives as used in this article are "means" to accomplish each goal. Objectives should be considered as a process-orientation; while goals should be considered product directed.

Learning objectives (Stage II) are organized according to different levels of achievement. Some objectives must be skill-oriented. Other objectives are enrichment directed. Still others are organized to provide corrective procedures while others provide remediation. Additionally, time should be provided each student to achieve personal objectives that relate to the accomplishment of each goal within the learning model.

To insure that learning does take place, instructional activities (Stage III) are organized for each learning objective. The quality and quantity of instructional activities are correlated to the level of learning for each student. Some students learn swiftly. Others need different types of learning activities and additional time to attain each objective.

Learning materials (Stage IV) are organized and criterion to each instructional activity. Materials selected must relate directly to the tasks to be accomplished. Print and non-print material should be provided to insure insight and closure for the learning modality of each student. These materials should use a multi-sensory approach wherever possible. This multi-sensory approach is one that correlates with Piaget's[6] stages of intellectual development and growth.

If the school principal, in cooperation with the teaching staff, utilizes the model as presented, then meaningful achievement should result. In addition, student achievement gain can be measured through "Formulative" evaluation procedures (Stage V).

Formulative evaluation (Stage V) is accomplished by providing immediate feedback on performance objectives and activities.

Formative evaluation helps pace the student's learning and helps motivate the student to put forth the necessary effort at the proper time and place of learning. This type of evaluation insures that each set of performance/learning objectives and activities has been thoroughly mastered before subsequent tasks are started.

Each formative evaluation is administered after the completion of the appropriate learning activity. This type of evaluation helps reinforce student's learning and assure each student that his present mode of learning and approach are adequate and rewarding.

It should be noted that formative evaluation looks at programs, not students (although it uses student achievement to do this). Formative evaluation aims at program improvement and is most meaningful when used on a consistent basis.

Formative evaluation (immediate feedback) should never be used to record in the teacher's book the results of achievement. The purpose is not to grade or certify the learner, rather each activity is scored to show each student what has been learned, and what still needs to be learned.

It has been demonstrated in research by Block[7] that formative evaluation becomes a powerful tool under the guidance of a competent teacher in insuring increased student learning. Students tend to view this formative process as a positive influence in helping identifying student learning errors, without punitive consequences.

Once formative evaluation procedures have been initiated, summative evaluation (Stage VI) can be implemented to validate the entire curriculum model. Summative evaluation addresses and measures all those goals, objectives, activities, and materials that have been established and obtained by the school programs. By systematically delineating each goal and its corresponding objectives, it is possible to quantify and guarantee the validity of the curricular program design as well as providing intervention strategies where needed.

Walberg[8] identifies nine factors that allow for optional effective teaching and learning. These are: (1) ability, (2) physical and mental development, (3) motivation, (4) instructional time, (5) instructional quality, (6) home environment, (7) classroom environment, (8) peer groups, and (9) use of out-of-school time.

Walberg's synthesis of about 3,000 studies suggest that these generalizable factors are the chief influences on cognitive, affective and behavioral learning. Without at least a small amount of each of these factors, the student can learn little.

Squires[9] in his research shows:

- That student achievement can be measured with validity and reliability in important areas.
- That teachers and schools make a difference in how well students succeed on standardized tests.
- That students who succeed on daily assignments and tests are more likely to have higher achievement on standardized tests.
- That when teachers teach most of the content and skills covered by standardized tests, students are likely to have higher achievement scores.
- That curriculum packages, in and of themselves, will not result in higher achievement for students.
- That schools can produce exceptional student achievement, even when students come from low socio-economic backgrounds.
- That the principal exerts a tremendous influence towards refining and maintaining a school's social system that promotes achievement and discipline.
- That changes in school practice happens over a number of years.

If school principals incorporate the research findings of effective variables that impact on student achievement, than effective and successful schools can result and a viable curriculum can continue to be operational.

The recent research by Bloom[10] has demonstrated the effects of selected alterable variables on student achievement. The incorporation of these findings into a viable curriculum and instructional program should result in greater student achievement gain.

Anania[11] found that when students were grouped in three different methods of instruction, i.e., (1) conventional, (2) mastery learning, and (3) tutoring, that the average tutored student outperformed 98% of the students in the conventional class. The average student under mastery learning was one standard deviation above the average of the conventional class, or above 84% of the students in the conventional class.

This variation of instruction falls logically at Stage III of the Curricular Program Design. The organization of instructional learning activities can incorporate these research findings and can insure greater student achievement in all our schools.

The role of the school principal, as the instructional leader, is to insure that teachers have a well-designed curricular program, and that meaningful teaching is criterion to that design.

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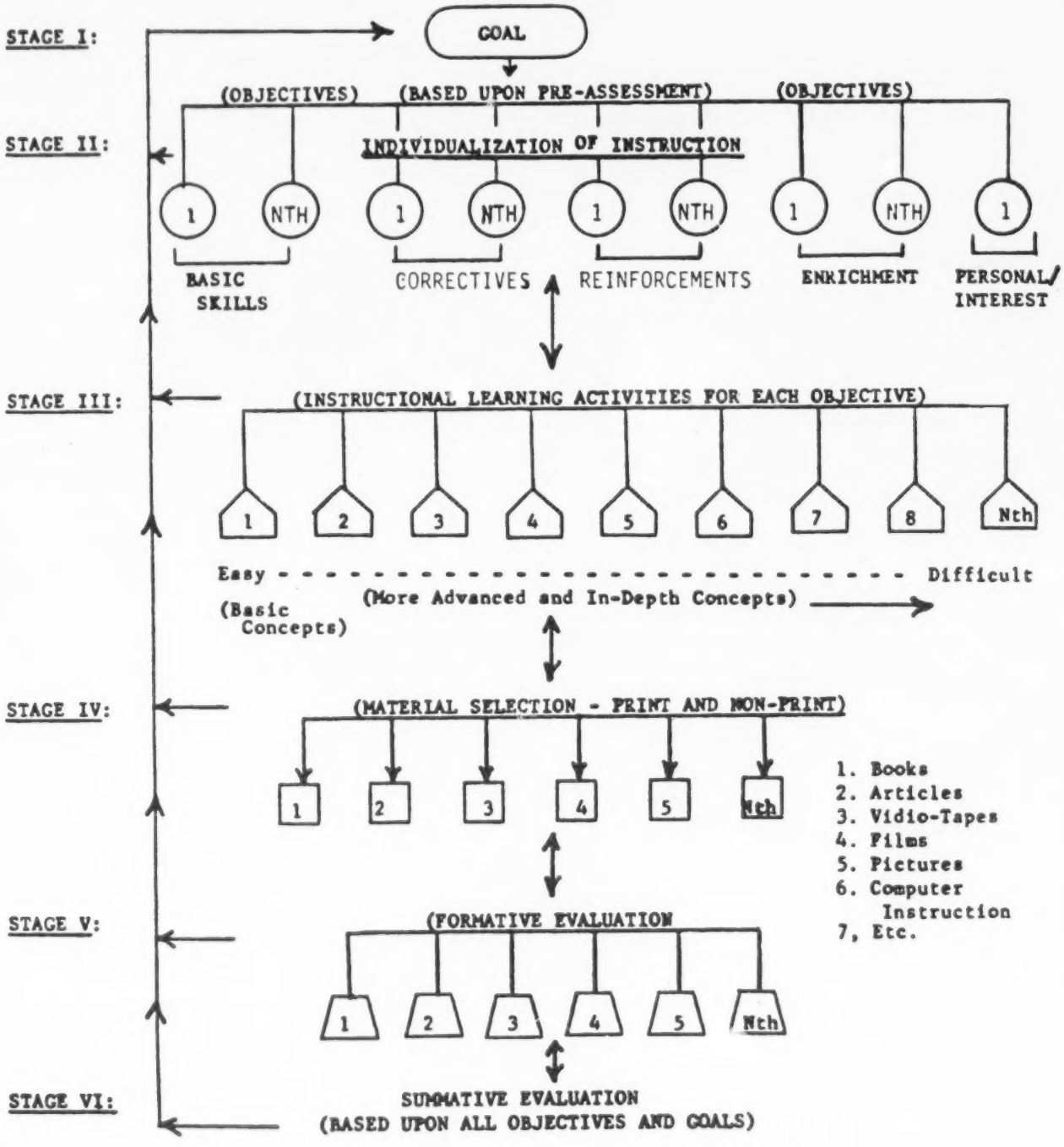
CHART I : CURRICULAR PROGRAM DESIGN


STAGE I:
GOAL
(OBJECTIVES)
(BASED UPON PRE-ASSESSMENT)
(OBJECTIVES)
STAGE II:
INDIVIDUALIZATION OF INSTRUCTION
1
NTH
1
NTH
1
NTH
1
NTH
1
BASIC SKILLS
CORRECTIVES
REINFORCEMENTS
ENRICHMENT
PERSONAL/ INTEREST
STAGE III:
(INSTRUCTIONAL LEARNING ACTIVITIES FOR EACH OBJECTIVE)
1
2
3
4
5
6
7
8
Nth
Easy - - -

Research on school effectiveness: Curriculum alignment

Prepared for: Alaska Department of Education
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Kathleen Cotton

Introduction

Curriculum alignment is a term used to denote the conscious alignment of three educational elements: curriculum, instruction, and assessment. In other words, we determine precisely what it is we intend to teach, we teach that specifically, and we test or measure specifically that which was taught. Good teachers and good schools have been doing this for years.

It was, of course, easier to keep everything in alignment when the curriculum was dominated by the textbook, and textbook publication tended to be dominated by a few large publishing houses. At the same time, testing tended to be dominated by a few major test publishers, some of whom were directly connected to the book publishers. As a result, a kind of informal, serendipitous state of alignment was often attained--and attained often enough that people did not find it necessary to complain about its absence. This is not to say that there were no alignment problems. Indeed, at the level of higher education, where students are more apt to register complaints, individual anecdotes about misalignment are easy to find. Every former student can tell about a "favorite" professor whose lectures did not follow the course syllabus and whose final exam had nothing to do with either. To some degree, this sort of misalignment has been present at other educational levels as well.

Lectures did not follow course syllabus - final exam didn't fit either

The kind of informal alignment achieved by a textbook-dominated curriculum was satisfactory to the extent that the textbook was satisfactory. During the 1960s and 1970s, however, more and more educational professionals began to feel not only that currently used textbooks were unsatisfactory but that the whole idea of textbooks was not adequate. These educators felt that a great variety of sources needed to be made available to a student--not just a single textbook. At about the same time the new curriculum development movement began to result in a proliferation of new types of curriculum and instructional programs. Simultaneously, we added whole new groups of student types to our responsibilities. And there was a great proliferation of test publishers and available tests at this same time. Moreover, everyone was encouraged to be individualistic and creative. No wonder that problems of misalignment started to appear and to be recognized.

Proliferation of new types of instruction, tests, led to problems of misalignment

Curriculum Alignment and Effective Schools

The effects of having a carefully aligned curriculum, instruction, and testing system have not been thoroughly researched. The notion of a conscious alignment is still too new for this to have happened. There is a major project underway in Los Angeles, through the collaboration of SWRL Educational Research and Development and the Los Angeles Unified School District, but it is not yet at the stage where overall impact data are available.

It could easily be argued that it is unnecessary to research the impact of alignment. The desirability of having the objectives, the instruction, and the testing fit with each other seems apparent. Indeed, no one seems to be arguing for conscious misalignment. There are those, however, who view conscious alignment efforts as being restrictive and destructive of spontaneity. The extent to which contention exists should probably determine the need for research on the impact of having a carefully aligned curriculum.

Meanwhile, the problem continues to exist, and at several levels. There is the plight of the individual college student whose professor didn't follow the syllabus and whose test fit

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neither the syllabus nor the lectures. There is also the district superintendent who tries to explain to the press why the children performed so poorly on a test--which is reputed to be good, when the instructional program is also reputed to be good. Such problems of good, but nonmatching, curricular components are being

Math achievement test, popular math program show only 60% match

noted more and more frequently. For example, the match between the mathematics items on one of the most popular nationally used achievement tests and one of the most popular elementary mathematics programs is approximately 60 percent. And these are only two of the critical elements in the alignment triangle; there is still the problem of whether or not the teachers are actually following the program.

Some authorities in education see alignment as being of critical practical importance. In an address delivered in February 1982 at the Alaska Effective Schooling Design Conference at the Northwest Regional Educational Laboratory, Wilbur Brookover of Michigan State University had this to say:

> In the absence of specific behavioral definitions for principals in effective schools, I should like to hypothesize that the principal's role be clearly identified as that of an instructional leader and that this role include at least three general types of behavior. First, that the principal see to it that the objectives for each grade level and for each course are clearly identified and understood by all of the staff. Second, that the principal's role include the regular monitoring and assessing of the instructional program to see that it is being carried out to master the objectives identified. And third, the principal along with other members of his staff and the central administration use appropriate tests and assessment instruments as the means of evaluating the effectiveness of the instructional program.

In other words, Dr. Brookover is suggesting that the principal's main task is to achieve alignment--consciously keeping the three elements of curriculum, instruction, and testing in alignment throughout the school.

Another speaker at the same conference, Dr. Alan Cohen of the University of San Francisco, spoke of alignment in a much more specific context: "Curriculum alignment accounts for much of the gains we see in mastery learning..."

Dr. Cohen went on to define and discuss alignment as it applies to mastery learning. Curriculum alignment is the degree to which the intended instructional outcome, the resources and strategies used to cause that outcome, and the test used to assess the outcome are all behaviorally congruent. In plain English, alignment (congruence) means that we test what we teach, and we teach precisely what we want the learner to learn. Such precision causes demonstrated mastery. Demonstrated mastery, in turn, helps insure that the learner sticks to the task, perseveres, participates in the prescribed learning activity. Apparently, learners like to succeed, and except in rare cases of pathology, most people tend to move toward activities at which they succeed.(1)

What we teach often is difficult to define precisely. But difficulty does not excuse us from the obligation to define. If alignment is one of the two (2) key components of effective instruction, then clarity of the outcome is essential to insure that the process and assessments are congruent. Fuzzy objectives are a sure sign that mastery learning is not in place.

Fuzzy objectives are sure sign that mastery learning is not in place

Direct instruction is (another) one of those current "in" terms. Some people use it to describe a teacher-delivered lesson, operationally defined as the teacher talking "directly" to his or her students. Actually, the term means alignment, (or) congruence. A mastery learning instructional sequence is competency-based. The student and teacher know exactly what outcome they seek; the materials, activities, and teaching resources are behaviorally congruent with the post-instructional assessment. The instructor defines A, causes the student to perform A, and measures A.

Professor Cohen speaks of alignment as a key factor in the highly effective mastery learning approach. He also uses the term "direct instruction" as a synonym for alignment. One could easily argue with this usage, but the similarity of elements cannot be denied. The point is that two well-known and demonstrably effective approaches to teaching, direct instruction and mastery learning, are based in large part upon the idea of alignment of objectives, instruction, and testing.

The translation of the basic idea of alignment into actual school practice is not necessarily easy. Good instructional planning is required. George Behr, of the SWRL/Los Angeles Curriculum Alignment Project, pointed out some of the key principles at the aforementioned

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design conference. Some of his main points follow:

> Good instructional planning is dependent upon having good instructional information. Instructional information includes: (a) a clear description of the instruction program or content; and (b) the skills the students have acquired or are in the process of acquiring. Capturing good-quality instructional information demands special attention toward recording a district's or school's instructional interests and accomplishments. However, good information is a necessary but not sufficient condition for success. Instructional planning has to be put into operational terms at both district and state levels.
>
> At the district level this means putting instructional interests in clear operational terms. General board policies and priority statements indicating clearly what the district intends with its instructional program are essential. There must be assurances that the resources (i.e., programs) are actually available. Having the two basic pieces of information as to what the intents are and what programs exist to accomplish those intents, it is then possible to fine tune the alignment of those two elements. It may be necessary to refine intents or strengthen programs. Or even to develop alternative programs. It will frequently be necessary to provide additional training for principals and others in the implementation of the programs. The careful development and coordination of a district-wide testing program is the third element. Coordination between schools is important, but not as important as between the testing and instructional programs.
>
> At the school level it is important to identify student strengths and weaknesses immediately and then to organize resources --materials, time, teachers, aides, etc., to build on identified student strengths and needs as they relate to the instructional intents of the school. School-wide instructional and testing programs are highly desirable--if not school wide, at least cross grade, cross department, or at least beyond a single classroom. Once again, as at the district level, coordination is of critical importance, most importantly between the instruction, the testing and the school's documented objectives.

School-wide instructional, testing programs are highly desirable

How Can Alignment Be Accomplished?

Assuming that alignment is a desirable condition, as is argued by Brookover, Cohen, and Behr, how can it be accomplished in a typical school system? The nice, neat paradigm of identification of objectives, followed by development of instructional programs and selection or development of tests is, of course, unrealistic for implementation in most situations. We do not start with a blank slate. Schooling is in process, instruction is taking place, objectives may or may not be documented--but teachers do have objectives, shared or private. Testing programs may be in place, required by the county, the state, or local tradition. Each of these elements may have had a perfectly reasonable origin, but still not be in alignment. Seldom is it possible to start from scratch. Usually, we must take one or more elements as given. This argues for an opportunistic approach--change what can be changed, when it can be changed, by whatever means feasible--but with the important proviso that there be an overall plan or vision to guide the separate changes into a rational pattern. Movement, however piecemeal it may appear to be, should always be in the direction of better alignment.

For example, suppose that a school were required by some authority (the district or state) or by strong local tradition to use and report on a certain mathematics test. The school has the obligation to determine the extent to which it is actually teaching the skills and understandings called for in the test. Suppose, further, that substantial differences were found to exist. Action should be taken to change what is being taught so that it better matches the test. Or the information about the differences could be used to argue for a change in the testing requirement. An argument for a change in the testing requirement would probably be a lot stronger if the first element of the triangle--objectives--was accounted for, i.e., documented and shown to be clearly in alignment with teaching practice. If our teaching practice is not demonstrably congruent with our objectives, or if those objectives are not documented then it becomes quite difficult to argue that any required test is not appropriate.

Action should be taken to change what is taught to better match the test

Another type of situation might obtain. Suppose that the objectives had to be taken as given, because they were documented and were required by the district board or some strong local tradition. Actual teaching practice should then be analyzed and its match to the

objectives determined. Discrepancies should be resolved by changing teaching practice. If one elected to quarrel with the official or traditionally accepted objectives, it would be well to have actual teaching practices documented, so that their reasonableness could be demonstrated as a basis for proposed changes in the objectives.

Document actual teaching practices to demonstrate reasonableness of changes

The point is that it is not necessary--and is frequently impossible--to change all three elements of the alignment triangle (objectives, instruction, and testing) at the same time. One works where one can. If there are given elements, we must live with them, at least temporarily, and work on the other elements--all the while improving the documentation of each of the three elements in case a challenge to the given elements seems appropriate. The following are a few practical approaches to improving alignment.

1. Implications Analysis of Objectives
This technique calls for spelling out, in behavioral terms, the implications of the goals and objectives. If we really mean what we say in the goals or objectives, what must we actually do, and what are the likely consequences? Contradictions and gaps in objectives will become apparent. Is what is implied in the goals and objectives what we really want to do? If so, we should be willing to make the implicit explicit. If not, we probably do not have a clear understanding of agreement on what we want to do.

2. Content Analysis of Tests
This technique starts at another corner of the triangle, the test. A test can be analyzed item-by-item by asking the question: what does a child have to know or be able to do in order to respond correctly to this item? More is involved than just the "correct" answer. For example, with a multiple choice item it means understanding each of the distractor items as well as the correct response. With a short essay response it may mean knowledge of format, punctuation, syntax, and other matters, as well as the content being written about. Once the required knowledge or skill is identified, two more questions naturally follow: first, where and when in our present school program will a child learn this; and second, is this really one of our objectives as explicitly stated in an official document?

3. Instructional Program Analysis
This third approach begins with the actualities of the instructional program. Timed sample observations are made in actual classrooms. The basic question is: what is actually being taught in this sample time period? Once this is determined, other questions follow: first, where in our official goals and objectives is the statement which provides a basis for teaching this particular fact, skill, understanding, attitude, or whatever was being taught? Second, how will we know it is being learned; where is the test item, quiz, performance test, etc., which will give us assurance that the children are actually learning what we are teaching?

4. Curriculum Program Analysis
This is essentially the same as Instructional Program Analysis, but instead of analyzing actual samples of classroom activities, the analysis is of the curriculum or formal instructional plan. The same questions are asked. This technique is particularly useful when contemplating the adoption of a new curriculum or instructional program. Many of the published packaged curricular programs do an excellent job of aligning the three elements of objectives, instructional activities, and the method of assessment. It is precisely this alignment that makes them effective. A purchased, packaged curriculum may be internally consistent and aligned, but it should also be checked against district or school statements of goals and objectives and tests. Adjustments may have to be made. In some cases, other school or district level tests may be made redundant (or even contradicted) by the built-in evaluation scheme in a packaged curriculum.

5. Goal and Objective Formulation
Although their numbers are rapidly decreasing, some schools and districts do not have written goals and objectives. If this is the case, one might start from scratch, so to speak. Projects to write goals and objectives have been quite popular during the past several years. However, in some cases the activities never proceeded beyond writing the goals and objectives. For any

Some projects never got beyond goals, objectives

impact to occur it is necessary to take the additional steps suggested in one or more of the four approaches listed above. Goals and objectives need to be subjected to implications analysis, even when freshly written. Goals and objectives need to be transformed into educational activities which will actually take place in the classroom, plans must be made and documented, and implementation must be actually observed. Testing questions must be settled and plans actuated. In short, the

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alignment questions must be addressed from the very beginning, and they must be kept before all those concerned--the school board, and administration, the teaching staff, support personnel, parents, and the students themselves.

Summary

This paper contends that the alignment of the three elements of (1) objectives, (2) actual teaching, and (3) the means and content of testing are essential to effective schooling. Research on this topic was sought but not found in significant amounts. The logical arguments of three authorities, Drs. Brookover, Cohen, and Behr, were presented in support of the idea of alignment. Five techniques for approaching the alignment problem were suggested. The first four of these suggested techniques recognize the complexities of the school context and the probable necessity of dealing with some of the elements of alignment as givens. The approaches suggested are in recognition of the fact that situations will vary greatly from school to school, but that it is usually possible to devise a method--a wedge--which can be used to enter and modify an existing system. The fifth approach, that of starting from "scratch" with the writing of goals and objectives was presented as a reminder that even a tabula rasa situation will not automatically lead to alignment. The elements of objectives, instruction, and testing must be constantly addressed and adjusted--fine tuned, as it were. Finally, it is necessary to be aware that the entire curriculum and instructional program of a school or district need not, indeed cannot, be subjected to an alignment effort simultaneously. The program can be examined and adjusted in parts and pieces provided there is an overall scheme to keep the parts in order and in perspective.

(1)See also Kathleen Cotton and William G. Savard, Mastery Learning, Northwest Regional Educational Laboratory, SIRS Management Information, December, 1982, Vol. II, No. 4.
(2)The other is P ratio (perserverance) or time-on-task.

INSTRUCTIONS FOR JIGSAW ACTIVITY

Time Required 60 minutes

Materials Articles or other reading assignments

Procedures

1. Describe Jigsaw activity:

   - Participants will divide into "home" groups of five. Within these groups, one member will read each of an assigned article.
   - All participants reading the same article will meet as "expert" groups to discuss that article and agree on a report to be made to each "home" group.
   - Participants will meet in "home" groups and each will report back on assigned section.
   - "Home" groups will discuss all articles and decide on two or three major implications of the research that can be reported to the full group.
   - Full group will reconvene for reports from all "home" groups.

2. Designate the approximate number of five-member "home" groups and make reading assignments.

   - Using cards or slips of paper, hand each participant group a reading assignment. Cards should be marked with a number and letter assignment. As there are five articles, mark cards in groups of five to correspond to the number of participants. Extra participants should be assigned to groups.
   - Cards should be designated as follows:
     Group 1: 1-A, 1-B, 1-C, 1-D, 1-E
     Group 2: 2-A, 2-B, 2-C, 2-D, 2-E
     Continue until sufficient cards have been made to include all participants.

3. Hand out copies of the articles.

4. Announce reading assignments: all participants with the assigned letter will individually read the following articles:
   - A Kimpston
   - B Martin
   - C Neidemeyer
   - D Sapone
   - E Savard

5. Have participants complete readings assignments. (15 minutes)

6. Convene "letter assignment" participants in "expert" groups. (1-A, 2-A, 3-A, etc., meet together; 1-B, 2-B, 3-B, etc., meet together; and so on). Groups are to discuss the reading and reach consensus on what they will report to "home" groups regarding the articles. (20 minutes)

   Ask participants with same articles to raise their hands to identify "letter" fellows. Call out each article to help participants locate one another.

7. Convene "home" groups. Each group member will report on the article read (approximately three minutes each) and group members will discuss research findings to reach consensus on two or three implications they will report to the full group. (15 minutes)

   (Total activity time: 50 minutes)

8. Reconvene full group and hear reports from each group on highlights. (10 minutes)

9. Answer any questions, close the activity.

KEY AREAS OF PRINCIPAL INSTRUCTIONAL LEADERSHIP

- Clear vision
- Improving curriculum
- Improving instruction
- Monitor school performance
- Positive school culture and climate
- Resources for improvements
- Handles routines efficiently

KEY AREAS OF PRINCIPAL INSTRUCTIONAL LEADERSHIP FOR CURRICULUM IMPROVEMENT

Establishes and maintains curriculum related to goals and priorities:

- Allocate time according to priorities
- Establish clear instructional objectives with staff
- Coordinates goals and objectives among teachers to increase impact
- Plans with teachers to accomplishf all objectives
- Monitors content/objectives covered/learned and works with teachers if progress is slower than expected
- Works with teachers on using the right resources and strategies to achieve objectives

Knows quality instructional practice and actively works with staff to improve their instructional skills:

- Actively involved in placing students and teachers for maximum instructional effectiveness
- Checks on quality use of class time--time on task
- Spends a good deal of time observing teachers and providing detailed feedback to help them improve instructional skill
- Protects instructional time
- Visible in halls and classrooms

Monitors school performance:

- Collects and uses a wide range of data
- Uses data to establish priorities for improvement
- Provides feedback to individual teachers and staff about school performance
- Works with staff to solve problems related to weak performance in priority areas
- Sets up systems for evaluating programs and staff

Activity 5: Action Planning

Goal: To develop a plan for working with staff to implement a new or revised curriculum.

Time: 30 minutes

Materials: Transparency 17: "Curriculum Cycle"
Transparency 18: "Curriculum Elements"
Transparency 19: "Curriculum Cycle Form"
Transparency 20: "Curriculum Implementation and Improvement"
Handout 14: "Curriculum Cycle Form"
Handout 15: "Participants for Curriculum Decision Making"
Handout 16: "Curriculum Implementation and Improvement"

Instructions:

1. Using **Transparency 17, Curriculum Cycle**, and **Transparency 18, Curriculum Elements**, quickly summarize the parts of the cycle and the critical elements that building administrators must plan for.

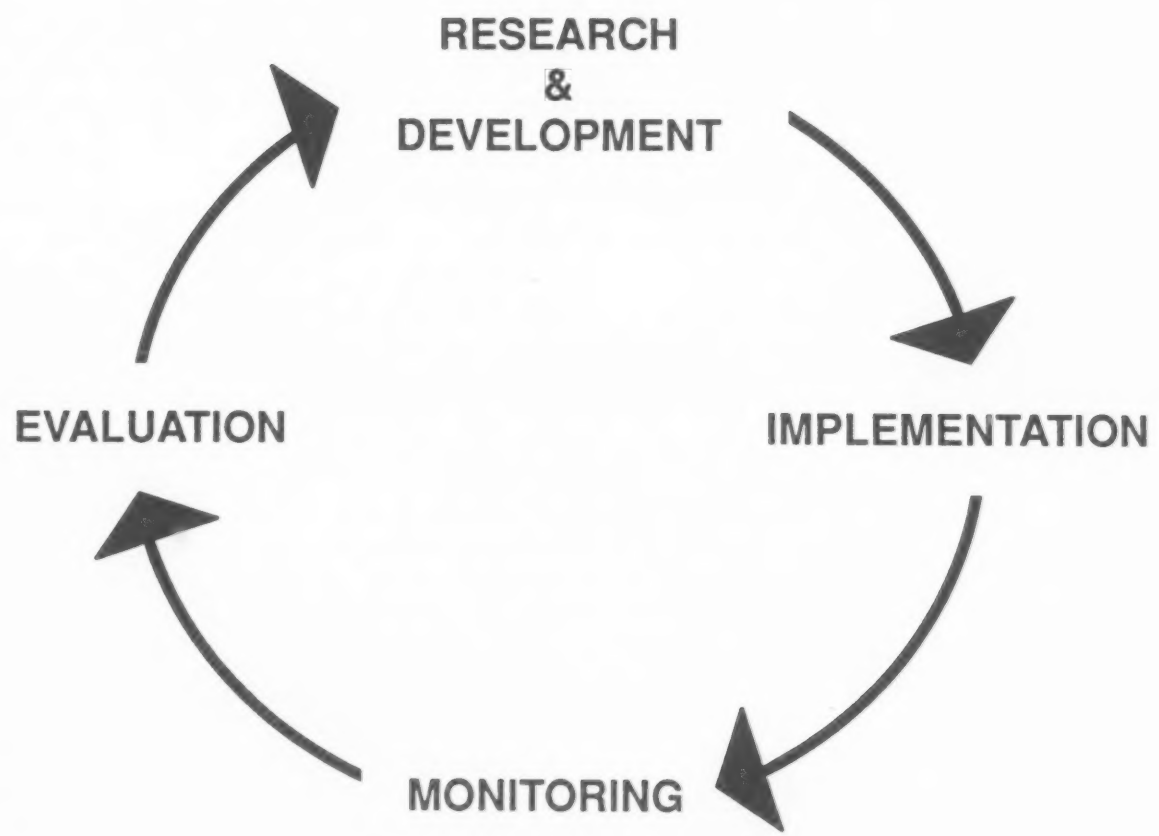
2. Before doing this activity, indicate that in small districts all or most of the activities happen at the building level. Refer to **Handout 14, Curriculum Cycle Form**, and **Transparency 19, Curriculum Cycle Form**, and ask participants to list two activities in each category that will, or should, take place at the building or district level and that will involve staff. Write a couple of examples on transparency, e.g. under Evaluation, and District Responsibilities write "create curriculum aligned tests, administer districtwide."

3. Refer to **Handout 15, Participants for Curriculum Decision Making**, to see who the participants may be in each activity. As you write the activity on **Handout 14**, indicate who from your district might be involved in a leadership role.

4. Have participants share one activity each until they've exhausted them for each step in the cycle.

5. Use **Transparency 20, Curriculum Implementation and Improvement**, and **Handout 16, Curriculum Implementation and Improvement**, to indicate that these are the questions particpants will need to address as they begin to work with the staff in improving curriuclum implementation.

CURRICULUM CYCLE



CURRICULUM ELEMENTS

- Objectives
- Resources
- Activities
- Assessments

CURRICULUM CYCLE FORM

	District Responsibilities	School Responsibilities
Research and Development		
Implementation		
Monitoring		
Evaluation		

CURRICULUM IMPLEMENTATION AND IMPROVEMENT

IMPLEMENTATION

- What objectives must/should we teach?
- How well are we teaching them?
- How well do strategies match the objectives?
- What resources are we using?
- What activities are we using?
- How well does the evaluation match the objectives?

IMPROVEMENT

- How well are students mastering objectives?
- Which objectives should be improved?

Curriculum Cycle Form

	District Responsibilities	School Responsibilities
Research and Development		
Implementation		
Monitoring		
Evaluation		

PARTICIPANTS FOR CURRICULUM DECISION MAKING

- Principal alone
- Curriculum leader alone
- Principal is primary; curriculum leader is secondary
- Curriculum leader is primary; principal is secondary
- Other is primary
- N.A.
- Not sure

CURRICULUM IMPLEMENTATION AND IMPROVEMENT

Implementation

- What objectives must/should we teach?
- How well are we teaching them?
- How well do strategies match the objectives?
- What resources are we using?
- What activities are we using?
- How well does the evaluation match the objectives?

Improvement

- How well are students mastering objectives?
- Which objectives should be improved?

Activity 6: Application Opportunities

Goal: To discuss applications

Time: 30 minutes

Materials: Handout 17: "Application Opportunities"
Handout 18: "Action Planning Form"
Handout 19: "Workshop Evaluation Form"

Instructions:

1. Review **Handout 17, Application Opportunities** and answer any questions.

2. Allow about 15 minutes for participants to use **Handout 18, Action Planning Form,** to plan their in-school application. Have a few participants report on what their next step will be.

3. Have participants fill out and return **Handout 19, Workshop Evaluation Form**.

APPLICATION OPPORTUNITIES

- Do a jigsaw activity with your staff with research articles about curriculum development or a specific area of the curriculum which is to be implemented.

- Review district documents about the curriculum development cycle. Fill out Curriculum Development Cycle form with your staff members.

- Examine with your staff how they feel about the success of the most recent curriculum implementation process. Compare with a program that was implemented five years ago. What is the level of implementation of each. Identify factors leading to a successful implementation.

- Read the article "Why Innovatious Program are Discontinued," by Ralph Parish and Richard Arends from *Educational Leadership*, January 1983.

- Determine with your staff an area to pursue in the curriculum alignment process and locate all current curriculum material related to this area, i.e., guides, texts, tests, descriptions of instructional strategies. **Bring the curriculum guide or textbook scope and sequence to Workshop 2.**

Action Planning Form

Actions (Steps/Procedures)	Timeline Begin	Timeline End	Resources (Materials/Supplies)

Workshop Evaluation Form

Answer the items according to your own opinions about the work session. There are no right answers. Circle the number on the scale that corresponds to your opinion.

1. Goals of the workshop:

Poor: Good:

1 2 3 4 5

(Unclear; diverse) *(Clear; shared by all.)*

2. Your feelings during the workshop:

Poor: Good:

1 2 3 4 5

(I was unable to express my feelings; my feelings were ignored; my feelings were criticized.) *(I freely expressed my feelings; I felt understood; I felt support from the participants.)*

3. Organization of the workshop:

Poor: Good:

1 2 3 4 5

(It was chaotic; very poorly done; I felt manipulated.) *(It was very well organized; it was flexible enough that we were able to influence it; all went smoothly.)*

4. Attitude about the workshop:

Poor: Good:

1 2 3 4 5

(Boring; it was a waste of time; I don't like the way it was presented; disliked it.) *(Interesting; was helpful; liked it)*

5. Content of the workshop:

Poor: Good:

1 2 3 4 5

(Uninstructional; did not learn much; not informative; too much process, not enough content.) *(Learned a lot; was informative; I'll be able to use the content appropriate to our needs.)*

6. **Productivity of the workshop:**

Poor: Good:

1 2 3 4 5

(Didn't accomplish goals; no useful ideas emerged; it got us nowhere.)

(Got a lot done; met goals; very fruitful; something will come of this session.)

7. **Leadership of the workshop:**

Poor: Good:

1 2 3 4 5

(Not good at all; poor.)

(Very competent.)

8. **Relevance of the workshop:**

Poor: Good:

1 2 3 4 5

(Does not apply at all to my project work.)

(Content is very useful to my work.)

9. **What was the most important aspect of the workshop?**

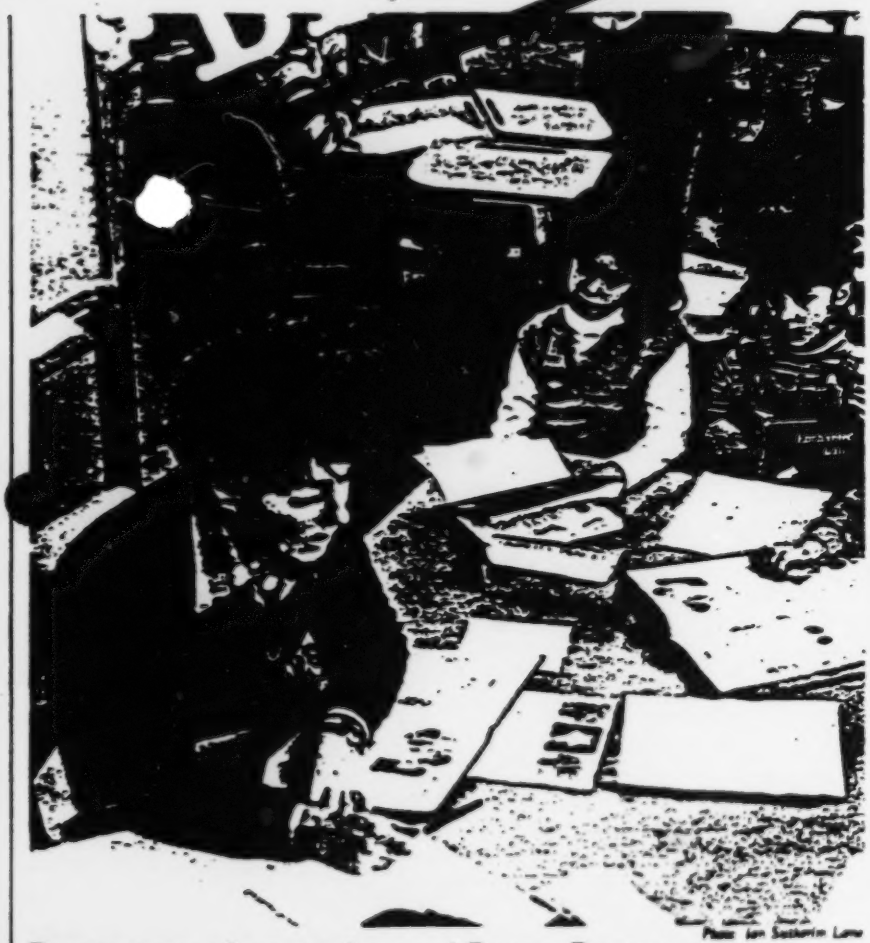
10. **What was the least important aspect of the workshop?**

11. **Comments:**

READINGS FOR TRAINERS

Northwest Regional Educational Laboratory
101 S.W. Main Street, Suite 500
Portland, Oregon 97204
Telephone (503) 275-9500

Why Innovative Programs Are



Programs chosen for the right "technical" criteria must also fit the cultural criteria of teachers.

RALPH PARISH AND RICHARD ARENDS

Ralph Parish is Assistant Professor, Educational Administration, University of Missouri, Kansas City; and Richard Arends is Associate Professor, Curriculum and Instruction, University of Oregon, Eugene

- *A principal of a small rural school who had led a two-year planning and adoption process for introducing a corrective reading program into his school "sort of found out" that the program was not being used as he talked to teachers in the hall one day.*

- *Title I teachers in a large urban school sat silently through three days of training on how to use a special program for high-risk kindergarten and first-grade students, even though they knew that the special room required for the program was not available.*

- *"We preferred the activities in our traditional program," report teachers who discontinued a new physical education program adopted by the superintendent and board of education upon the advice of a local doctor who also chaired the district's curriculum advisory committee.*

Over the past two decades, concerned people in local schools have expended considerable energy and resources aimed at making schools better. Some changes in practice have occurred but not nearly as often or with the scope that was intended. According to Mann (1978), innovations or revisions in programs have had only about a 20 percent success rate in education. Other studies have concluded that successful implementation is much more complex and difficult than one might expect (Lortie, 1975; Miles, 1979; Sarason, 1971; and Fullan and Pomfret, 1977). We can learn from our efforts, however, if we view our failures not as resulting from stubborn resistance or bad intentions but instead as ingrained in the complex relationships found in schools.

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Study of Midwest Schools

Lack of success in implementing programs may be related to a lack of understanding of how schools work as social systems, how political processes influence change efforts, and the many dilemmas facing those who attempt to facilitate school improvement. We have identified features of the formal and informal structures of schools that can help explain the discontinuation of school improvement programs. Our information comes from interviews with teachers, administrators, and change agents in five midwestern school districts that adopted innovative programs and discontinued their use. Each district we studied had been assisted with adoption and implementation efforts state Title IV-C Adoption Grants and members of the National Diffusion Network (NDN), a federally-sponsored group created in 1974 to disseminate exemplary programs to local schools.

Administrators and Politics. Kogan (1978) and House (1974) speculate that the implementation of an innovation in schools can only be understood as a political dynamic between the school and its many interested constituent groups. Scott, Meyer, and Deal (1980) go even further and suggest that it is more important for a school's survival to please its constituents than to find better ways to improve its technical core, such as perfecting better methods for teaching children.

Each of the schools in our study had adopted innovative programs (externally developed) because of political pressures—in one instance from a local, influential doctor on a curriculum advisory committee; in another from a group of parents; and in still another om several dissatisfied teachers. At ev- y site, a superintendent or building principal had assumed early advocacy and leadership in response to constituency demands. Administrators played a key, and in some instances the major, role in selecting and adopting programs offered by NDN and in coordinating efforts to provide training and assistance to staff who were expected to implement the programs.

Change Agents as Technicians. The assistance provided to the schools by the NDN facilitators and developers was almost exclusively technical in nature. That is, exchanges (1) were with members of the formal decision-making structure and followed the prescribed NDN adoption process, (2) were responsive to desires of local administrators, and (3) provided information about how to "make an adoption" and receive training as contrasted to assisting with the social consequences of using the new program.

Training was also technical in nature and short-term. It provided teachers with specific skills needed for teaching the innovative program and focused on learning the program's language and world views. Little effort was made to deal with the local issues or special circumstances that called for adaptations, which were later discovered to be crucial to implementation.

"Anthropologists have argued for many years the need for cultural adaptations if innovations are to be used."

Teachers and Autonomy Norms. It is well known that norms exist in schools that promote teacher autonomy and individualism. This means that most teachers cope with everyday teaching tasks and those associated with change efforts individually, that they are prone *not* to interfere with the work of colleagues, and that for the most part they guard carefully their right to teach in ways they think best.

Teachers we interviewed were willing to consider new programs, particularly if requested to do so by administrators. They viewed attending awareness conferences, inservice, and training events as part of their professional duty. However, when it came to implementation and use of a new program, we found universal agreement among teachers that the program had to fit their way of teaching. Teachers believed they had the right to determine, on their own, what would happen in their classrooms with their children.

Teacher autonomy not only influenced aspects of the programs that would be used, it also decided their ultimate fate. At all five sites in our study, the decision to discontinue was made by teachers outside the formal decision-making structure of the school. Administrators were informed later of that decision. In every instance, administrators who were the key decision makers in adoptions accepted the nonimplementation decisions of their teachers. The change agents (developers and facilitators) left everything up to those at the local level.

The Informal Covenant. We use the concept of "informal covenant" to help explain what happened to these innovative programs. The informal covenant is an informal agreement created to deal with instances when external solutions are used to solve problems of local schools. The informal covenant is characterized by three critical features:

1. The principal (a) speaks for the school concerning needs and is entitled to negotiate with outsiders and make adoption decisions for the school; and (b) is entitled to select materials and arrange for inservice he or she believes appropriate.

2. Teachers (a) will support administrative decisions made by the principal or others and attend inservice events if requested; (b) will maintain final authority about if and how a new program will be used in their classrooms; and (c) expect principals to support program decisions they make and not to interfere with instructional decisions.

3. The covenant itself remains informal, is adhered to, and allows principals and teachers to maintain important control over day-to-day operations without confronting authority. It allows outsiders to penetrate the system at the formal level during the adoption stages of an innovation but not at the more important informal level where critical implementation decisions are made.

For example, at the beginning of the school year, teachers at one site were informed that their principal had volunteered "their school" to field-test a new physical education program. Teachers were provided technical training for a program that was somewhat different from their traditional approach. They were given detailed teachers' manuals, a physical education specialist with whom to team, and extensive new equipment and materials. However, within two months, the "lounge talk" was all negative. The few teachers who were comfortable with the new approach did not want to risk the displeasure of their fellow workers by saying good things about the program. Subsequently, even though the program had some strong community support, it was discontinued by teachers who decided to develop their own programs, which interestingly included a considerable portion of the new program. And administrators in the district supported the teachers' actions.

Implementation Lessons

The experiences of the people in our study, along with research and practice by others, point the way to guidelines for planning and disseminating new programs:

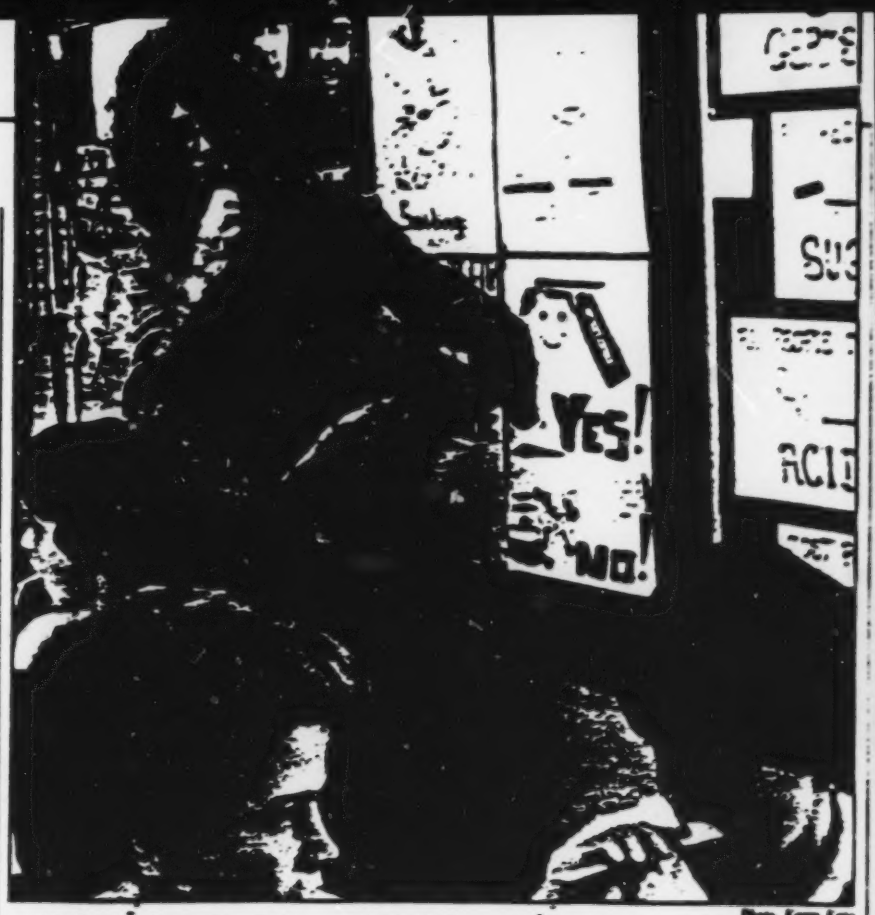

Photo: Roger Kuss

Understanding the Culture of the School. Anthropologists have argued for many years the need for cultural adaptations if innovations are to be used. Spicer (1952) records a classic case, illustrating the importance of informal cultural norms in implementing new technologies. A group of southwestern Spanish-American farmers had been introduced to a new hybrid corn that was more weather- and bug-resistant as well as three times as productive as their traditional "red" corn. By the end of the second year, over 60 percent of the farmers were using the new corn with greater success than expected. However, by the end of the third year, only four farmers were still using the innovation. The hybrid corn did not look like, taste like, or make tortillas like the old corn, and the farmers believed it was not worth the complaints of wives and children.

For effective implementation to occur, it is essential for those in schools, such as principals and teachers, and those from outside, developers and change agents, to understand the cultures of the groups involved and plan their implementation efforts accordingly. It is important for change agents to understand the natural way things are done inside schools and for school personnel to understand the technical, more research-oriented approach to teaching and curricula that characterizes most NDN and RD&D programs. Some examples from the schools in our study illustrate this point.

The principal and some of his teachers in a large urban school district decided to do something special for a group of disadvantaged students having trouble in kindergarten and first grade. They adopted an NDN program designed for high-risk students that required setting up several learning centers in a special room, having no more than 15 students in the class, and maintaining a complex record and communication system. The teachers received training and quickly understood the skills needed to use the new procedures and materials. However, the program was discontinued after the first year because of possible racial antagonism (a situation that was never discussed), the loss of the only space in the building that was suitable for the program, and the active campaign of an influential teacher who disagreed with the philosophy and methods of the new program.

Intervention strategies exist that would allow all of these cultural and

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systems issues to be addressed and resolved. They could have been employed by those within the system who worked toward implementation of the new program or by the outside change agents.

Extend Time for Training Teachers. The training conducted at the five schools in our study was brief—one to five days—and limited to specific skills teachers would need to implement the new programs in their classrooms. In only one instance was follow-up training requested or provided, and specific school problems that could later hamper implementation were universally ignored.

For instance, a small rural district wanted to improve reading in its junior high content classes. The district adopted a diagnostic/prescriptive reading program that required a special reading teacher to work with 10 to 15 students who were released from their regular classes several times a week. Four secondary content area teachers were trained over a grueling five-day period, but none mentioned the fact that the program could not be used because funds did not exist to provide the needed space or a special reading teacher. Materials were purchased for the new program with an adoption grant. During training, the teachers never mentioned the local situation, and the trainers never inquired why regular subject matter teachers were taking training designed for special reading teachers.

Fullan and Park (1981) have written that "implementation will occur to the extent that *each and every* teacher has the opportunity to work out the meaning of the implementation in practice" (p. 27) and when they have had the opportunity to change their behaviors, skills, and beliefs. From everything we know about changing human behavior and adult learning, it is unlikely that teachers will work out "new" meaning and change their behaviors and beliefs over a short period of time. It seems reasonable to assume that, for most new programs, extended training spread over time is a prerequisite for change and that on-site cultural adaptation assistance is required to solve the specific problems that occur during implementation.

Develop a Two-Level School Site Implementation Plan. Traditional wisdom and research suggest that the principal is critical to successful implementation. Yet we found that although principals were critical in the adoption phase, they were not critical to implementation—teachers were. Teachers implemented or discontinued innovation without the principal's involvement and held to the view that a principal did not have the right to impose specifics of a new program on them.

This has led us to two conclusions: (1) Principals control access and adoptions; therefore, strategies for adoption and training must include interaction with the formal system. (2) Teachers control implementation; strategies must be used that involve and include the informal networks and "ways of doing things" that exist in each school. Any implementation plan must be developed with heavy collaborative input and involvement of teachers and principals prior to training.

Expect, Encourage, and Assist with Adaptations. Even though the programs we studied were discontinued, many aspects of these programs were used during early implementation stages. In each instance, however, the materials, procedures, and techniques were adapted from the original design of the program's creator. This phenomena is not unique to schools or programs in our study. Whether it is a new home, new technology in automobiles, or technology relating to work, we want the things around us to fit our individual views and the context within which we live.

Those who plan change efforts within schools and those who provide assistance from the outside have much to learn about how to maintain the essential ingredients of an innovation while allowing it to be molded to fit local situations and preferences. We suspect it will require regular and extended interaction between developers and users and a willingness by all parties to enter into further development of an innovation already judged effective. We also suspect it means creating some new roles as curriculum, inservice, and staff development functions are redefined.

Summary

We can provide no easy steps for those who work in schools or for those who assist from the outside. Our suggestions are intended to indicate new ways of viewing schools in order to learn about the "territory." Once the territory of a particular school is known, collaborative plans for implementing new programs can be made that utilize the strength of the teachers' culture as well as the cultures of administrators and developers. We need to question some traditional assumptions about accomplishing change by finding a fit between research and user needs. We need to examine strategies that are more in tune with cultural change than technological change. And we need to make our change efforts at the same time more rigorous and flexible and allow our plans, in the words of Lars Lerup (1977), to remain with a "touch of the unfinished." □

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CURRICULUM IN THE YEAR 2000: TENSIONS AND POSSIBILITIES

by Michael W. Apple

The next two decades will be a time of increasing conflict in the curriculum, predicts Mr. Apple. Solutions to many of the problems that are now taking shape will require coordinated efforts between educators and the larger society.

Predictions of the future, even in the best of times, are hazardous. So many unforeseen variables and unexpected circumstances can influence outcomes. If this is so in the best of times, it will be even more the case in the next few decades, for these are certainly not the best of times. Thus all of my claims in this article should be preceded by a single word: *if.*

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Much of what I am predicting about U.S. education in general and the curriculum in particular depends on political and economic factors. For example, I am not very optimistic about the future for urban school districts. I see the curriculum in urban schools becoming more dated and less flexible in the next 10 to 20 years. I arrive at this prediction from a sense — backed by a decent amount of evidence — that our economy will continue to sputter, if not to stall, in the foreseeable future, thereby creating a serious dilemma for the hard-working teachers and administrators in numerous school districts across the U.S.[1] However, there are also hopeful signs, especially in attempts — even in the face of serious financial difficulties — to keep necessary programs alive and to make curricular content more representative and honestly reflective of a significant portion of the U.S. population.

Basically, though, I see the next two decades as a time of increasing conflict in curriculum. School programs will reflect the splintering of common interests and the polarization of the larger society, trends largely caused by pressures and conflicts over which the schools have little control. A significant amount of the blame will also lie in curricular decisions made as long ago as the early Sixties or as recently as today.

Before going further, I must review some important social and economic facts. It is unfortunate but true that 80% of the benefits of current social policies go to the top 20% of the population. Moreover, the gap between the haves and the have-nots is widening, due in part to the severe economic problems that the U.S. is now experiencing.[2] To their credit, most Americans feel uncomfortable about this situation. But this general discomfort will not prevent many interest groups from arguing that it is not "our" responsibility to alter economic disparities. Nor will it prevent economic inequities from creating serious tensions in U.S. education. If anything, the state of the economy and contradictory attitudes toward it will exacerbate the problems that educators now face. In the next two decades, the curriculum will reflect many of these tensions in the larger society. This should not surprise us. Only rarely has curricular content *not* reflected what is happening outside the school.[3]

I will focus here on three interrelated

areas: the content of the curriculum, its form (or how it is organized), and the process of decision making that shapes it. Only by considering all three factors can we understand the forces, building today, that will set limits on and create possibilities for the curriculum in the year 2000.

One major issue that is brewing now and will continue to grow is the debate about "basics." This is not a simple problem. There are many competing conceptions of what everyone should be taught, of what knowledge will be the most valuable to students and to the society. The current controversy over bilingual programs in elementary schools and contemporary proposals to "upgrade" content and to reduce electives in the secondary schools are cases in point. Defining the basics will prove to be one of the most difficult issues that the schools will face, because schools will serve as arenas in which various groups will do battle for their differing conceptions of what the society should value.

It is clear, for instance, that the content of the curriculum has become a major political issue. The activism of conservative and extremist groups has increased measurably. This activism will continue to grow, feeding on past successes that result in increased funding. Mel and Norma Gabler of Longview, Texas, are prime examples; they speak for a larger movement that spends considerable time denouncing textbooks that are "unpatriotic," that reflect "absolute values" and "free enterprise," that emphasize too strongly the contributions of minority groups, and so on. Armed with the notion that God is on their side, they are likely to scrutinize an ever-broader swath of curricular content, intent on purging it of any taint of "un-Americanism" and "secular humanism." The increase in book banning and the evolution/creation controversy document the growing willingness of such groups to enter into debates over what should be taught in the schools. Thus educators will have to give more attention to justifying *why* they teach what they do. And this task will be increasingly difficult, because teacher-training institutions are moving toward greater stress on *how* to teach, not on providing justifications for and skills in arguing about *why* educators teach particular information, skills, and attitudes. Unless this trend is reversed, teachers and administrators will be hard pressed to defend curricular decisions against well-organized and well-funded attacks.

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Tension between business and organized labor will also manifest itself in conflict over curricular content. On the one hand, we are currently witnessing the emergence of industry as a powerful pressure group that seeks to influence education. Businesses across the U.S. have established departments whose goals are to distribute curricular materials to schools, to convince textbook publishers to tout the benefits of free enterprise, to lobby state legislators, and to provide summer internships for teachers that will help them develop a more positive perspective on business. I see no sign that this type of pressure will abate.[4] On the other hand, labor unions have begun to stress the importance of labor education. A movement is growing to teach labor history and to encourage students to examine critically the problems of the U.S. economy and the imbalance in economic planning. These conflicting goals — to teach content that will produce citizens who will meet the needs of industry and simultaneously to examine critically industrial models and power and the putative lack of concern of big business with the needs of workers — will create a good deal of friction over what should be taught.

This friction will be heightened by the growing cooperation between state departments of education and the business community. In times of economic difficulty, when tax revenues are lower and jobs are hard to find, it is not unusual for school programs to become more closely aligned to the needs of business. We can expect to see more emphasis on teaching job-related skills and on disciplining students according to the norms that guide the workplace. This shift will be difficult to accomplish, because the U.S. job market is clearly changing. New skills rapidly become obsolete, and new jobs are not being created quickly enough.[5] Furthermore, many individuals will object to this closer relationship between the schools and industry, arguing that business generally has its own profits, not the common good, at heart. Thus one more conflict over curriculum will arise.

These two "political" issues — defining the basics and determining the proper relationship of the school to business and to labor — will not be the only ones to surface. The basics will also be expanded to include academic areas that now seem to receive less attention than they deserve. Clearly, there will be attempts, largely positive, to strengthen the teaching of mathematics and science. Several states are already preparing to mandate more science and mathematics courses for high school graduation and the retraining of teachers at state expense, in an effort to reverse the current shortage of qualified math and science teachers. This increased emphasis on mathematics and science will be accompanied by a greater focus on computers in all areas of the curriculum, but especially in math and science. We must be exceptionally cautious and avoid jumping on yet another technological bandwagon. There is no quick fix for the difficult problems we face. Without higher salaries and greater prestige to attract and keep well-trained teachers in these curricular areas, the prospects for success are mixed.

An unfortunate trend will accompany this increased emphasis on mathematics, science, and technology: increased differentiation of the curriculum. Schools will try to identify "gifted" students much earlier. We will see a return to tracking systems and more ability grouping than is currently in evidence. When large amounts of financial, material, and human resources are available, such differentiation may make it easier for teachers and support personnel to meet individual needs by working intensively with students, taking each to the limit of his or her capabilities. But in a time of fiscal crisis, such resources will not be readily available; in such a time, the reinstitution of differentiated curricula and tracking systems will often have the opposite effect: to ratify the low socioeconomic position of many children.[6]

The fiscal crisis will have other profound effects. Since less money will mean fewer teachers and support services, we will see an accompanying steady decline in curricular alternatives as well. There will simply be fewer programs and options.

Moreover, fiscal constraints will hinder the replacement of existing instructional materials (which provide the foundation for nearly all curricula); the average age of textbooks used in the schools will increase and perhaps even double. This trend will

be most evident in large urban areas, because they will suffer disproportionate declines in tax revenues and in state and federal support. As a result, the gap in the quality of curricular offerings and instructional materials will broaden between cities and their more affluent suburbs. Thus curricular content will differ by race and social class.

As I have already noted, we must consider curricular content, form, and the process of decision making simultaneously. There is no guarantee that President Reagan's New Federalism will go beyond rhetoric, but evidence suggests that decision making will shift to the state level. Oddly, this shift — though aimed at increasing the responsiveness of state authorities to local districts — will actually decrease curricular diversity. As decision-making power coalesces at the state level, publishers will tailor their textbooks increasingly to the values of those states that encourage statewide textbook adoptions — generally through reimbursements to local school districts for some portion of the cost if they select their instructional materials from an approved list. For publishers, getting materials placed on such lists is quite important, since it nearly guarantees high sales and profits. Given this economic fact, states such as Texas and California, which have state textbook adoption policies, will have disproportionate power to determine which textbooks and resources will be available throughout the U.S. Hence we will see even greater standardization of the curriculum. The curriculum will become "safer," less controversial, less likely to alienate any powerful interest group.

I have argued that curricular content will become both a political football and more homogenized (due to economic pressures on publishers and political and economic pressures on local and state education authorities). A third trend will also become apparent: The form or organization of the curriculum will become increasingly technical and management-oriented. And this will have a serious impact on teachers.

A fundamental change in the curriculum of the American school began in the early 1960s, especially at the elementary level. Sputnik inspired fear that the teaching of mathematics and science lacked sufficient rigor and that the academic disciplines were not central enough in the curriculum; in response, the U.S. government funded a large number of projects that focused on producing new curricular materials. A significant proportion of these materials turned out to be "teacher-proof." They specified everything that a teacher had to know, say, and do. Often, they even specified acceptable student responses. This approach — to specify *everything* and leave nothing to chance — was tacitly sexist, since it seemed to assume that elementary school teachers (most of whom were women) could not cope on their own with sophisticated mathematics and science.[7] To insure that these materials would be purchased and used, the government reimbursed school systems for the bulk of their costs.

Although many of these new materials were not used in the ways that their developers had envisioned,[8] they did signal an important modification in the curriculum — one that we will be living with for years to come. The curriculum became less a locally planned program and more a series of commercial "systems" (in reading, mathematics, and so on). These systems integrated diagnostic and achievement tests, teacher and student activities, and teaching materials. Such integration has its strengths, of course. It does make possible more efficient planning, for example. But its weaknesses may prove to outweigh its strengths.

What we have actually seen is the *de-skilling* of our teaching force. Since so much of the curriculum is now conceived outside the schools, teachers often are asked to do little more than to execute someone else's goals and plans and to carry out someone else's suggested activities. A trend that has had a long history in industry — the separation of conception from execution — is now apparent as well in U.S. classrooms.[9]

This trend will have important consequences. When individuals cease to plan and control their own work, the skills essential to these tasks atrophy and are forgotten. Skills that teachers have built up over decades of hard work — setting curricular goals, establishing content, designing lessons and instructional strategies, individualizing instruction from an intimate knowledge of each student's desires and needs, and so on — are lost. In the process, the very things that make teaching a professional activity — the control of one's expertise and time — are also dissipated. There is no better formula for alienation and burnout than the loss of control of the job. Hence, the tendency of the curriculum to become totally standardized and systematized, totally focused on competencies measured by tests, and largely dependent on predesigned commercial materials may have consequences that are exactly the opposite of what we intend. Instead of professional teachers who care about what they do and why they do it, we may have only alienated executors of someone else's plans. Given the kinds of materials that now dominate many classrooms in such curricular areas as mathematics and reading,

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this danger seems likely to increase over time.

The economics of this process of de-skilling is worth noting. In essence, we have established a capital-intensive curriculum in our classrooms. Simply to keep the program going, a large amount of money must be set aside for the ongoing purchase of consumable materials. School districts may soon find themselves burdened with expensive "white elephants," as school budgets are reduced and money is no longer available to purchase the requisite workbooks, tests, worksheets, revised editions of "modules," and so forth. School districts will then have to turn to their own staffs to create materials that are less expensive and more responsive to their students' needs — only to find that the necessary skills for doing this have been lost. This will be a very real predicament.

At the same time that teachers are being de-skilled, however, they are gaining greater control over which curricular materials and textbooks will be purchased for use in their classrooms. Curricular decision making is becoming more formally democratic; less power now resides in central curriculum offices or with select groups of administrators. Both teachers and parents are becoming more involved. Meanwhile, an increasing concern for accountability and for measurable achievement outcomes in a few "basic" areas will also bring a movement toward more standardized testing, more objectives, more focus on competencies, more centralized curricular control, and more teaching to the tests.

As this movement gains momentum, a vicious circle will develop. Publishers will further standardize content, basing it on competency tests and routinizing it as

much as possible, so that the materials will produce measurable outcomes with little variability that will fit cost/control models.

Thus far, I have not been very optimistic about what will happen in the areas of curricular content, form, and decision making. I do not intend simply to be a nay-sayer. It is critically important to be realistic about the very difficult times that we educators will confront in the not-too-distant future. Only then can we begin to plan how to cope with what may happen. I would be remiss, however, if I did not point out some of the very beneficial tendencies that will become more visible by the year 2000.

Certain content areas — quite positive ones, in my opinion — will receive more emphasis than they do at present. Just as greater attention will be focused on mathematics and science (which, I hope, will be taught *not* as mere technical skills, but as creative and powerful ways of constructing meaning[10]), so, too, will teachers devote more time to the topics of ecology and peace. People from all walks of life, representing a variety of political persuasions, will coalesce around the topic of peace and urge that it be given more attention in the curriculum.

However, positive outcomes from additions to the curriculum will not be the dominant trend in a period of fiscal constraints. In fact, many school districts will be forced to save money by eliminating necessary programs. But this may prove beneficial, as well — especially in generating closer and more cooperative bonds between school personnel and the communities they serve. Teachers and parents will form coalitions to save programs that they see as essential. Difficult decisions will cause closer relationships to develop between community groups and the educators who must make those decisions. In a period of declining revenues and with the projected rise in enrollments, few outcomes will be more important. Funds will be needed to hire new teachers, to maintain and expand curricular offerings, to deal with students with special needs, and to carry on other essential tasks. Such funds can be generated only through greater cooperation with and increased support from the public. Even the scrutiny of the curriculum by conservative groups, to which I alluded earlier, should not be seen as merely a threat. The fact that parents — of whatever political persuasion — take a serious interest in their children's education suggests possible avenues for cooperation and fruitful discussion.

If we were freed from some of the tensions, conflicts, and pressures that will probably affect us as we strive to build or preserve a high-quality educational program for the children entrusted to us, what might we do about content, form, and decision making? Here I must be honest. A portion of what I will say has been recognized for years by knowledgeable educators. But such educators have seldom had the time, the resources, the support, or the freedom from contradictory pressures to act on this knowledge.

Let us look first at content. As attempts accelerate to redefine and to drastically limit what is taught to children, we should *broaden* our definitions of literacy and of the basics to include not only reading and writing — which are very important and must not be neglected — but also social, political, aesthetic, and technological literacy. Community action projects that provide curricular links between students and their local communities can help youngsters develop social and political responsibility and learn the necessary skills for active participation in the society.[11] At the same time, we should expose all students to beauty and form, aesthetics, and various ways of creating personal meanings — including research, poetry, dance, the visual arts, and film making. In other words, we should give equal weight to both "discursive" and "nondiscursive" subjects, so that each student has an opportunity to discover his or her talents and to develop the wide range of tools with which individuals control their own lives and their futures.[12] Thus we must define the "basics" very broadly.

Given the important role of technology in the future, *all* students — not just a select few who are "gifted and talented" — should be literate both in using computers and microcomputers *and* in analyzing their social implications. For example, computers and video-display equipment increase efficiency, but they may also cause untold thousands of workers (primarily women) to lose their jobs, become de-skilled, or work under stressful conditions. "Literacy" means the ability to analyze and deal with the social as well as the technical implications of this new technology.

In a recent column in the *New York Times*, Fred Hechinger noted that, if we approach computer literacy as a narrow vocational issue, we are bound merely to add one more relatively ineffective career education program to the many that already exist. As he put it:

> The visions of brave new electronic worlds of microchips and robots raise simultaneous demands for a schooling that looks to the future by learning from the past. Yes, the computer must be mastered by all, regardless of race, sex, or economic condition. But at the same time . . . the computer must be mastered by young people who are secure in a broad understanding of what used to be called general education — including language, history, economics, mathematics, science, the arts; in short, the human condition.[13]

To focus on a broad and general education requires that we be sensitive to the fact that the curriculum must represent us all. A "selective tradition" has operated in curriculum to date. This tradition may be more visible in some subjects than in others, but it is quite clear that the knowledge of some groups is not represented adequately in the curriculum.[14] For instance, we tend to teach military history

"But Daddy, I am doing my homework!"

or the history of U.S. Presidents; we teach less rigorously the history of the U.S. working class. Obviously, we have made advances here, just as we have made advances in teaching the real histories, contributions, and cultures of ethnic minorities and of women. Our progress in eliminating sexism and racism and in recapturing the lost past of U.S. labor is too important to allow these advances to slip away in the next decade or two. We must continue to pursue curricular balance. The content that we teach cannot be determined solely by the needs of any one group, even in times of severe economic difficulty. That would be short-sighted.

The curriculum must simultaneously be both conservative and critical. It must preserve the ideals that have guided discourse in the U.S. for centuries: a faith in the American people, a commitment to expanding equality, and a commitment to diversity and liberty. Yet it must also empower individuals to question the ethics of their institutions and to criticize them when they fail to meet these ideals. Curricular content should give people the ability to interpret social change and to reflect critically on what is happening in their daily lives. This is not a formula for an "easy" curriculum. It requires hard work and discipline on the part of both teachers and students.

Moreover, participation in such a curriculum is not merely an individual act; it is a profoundly social act as well. In an interdependent society, the curriculum should encourage cooperation and the testing of each individual's ideas against those of others. This requires countering — at least to some degree — the individualized instructional models now widely practiced in schools. All too many children sit isolated from one another in the elementary grades, completing worksheet after worksheet with little or no opportunity for serious discussion, deliberation, debate, or cooperation. Individualization is important; however, to be truly meaningful, it must be balanced by a sense of social responsibility.

The issue of time looms large here. Educators must have time to consider the curriculum carefully. Too many curricular decisions today focus on *how* to teach, not on *what* to teach. Teachers and other educators must have opportunities to discuss in detail what they want to do and why they want to do it. Creative scheduling is essential, in order to make time available for frequent, in-depth discussions of curricular content among local educators.

Obviously, teachers are not the only ones who are affected by what is taught. As much as possible, all individuals who

Curricular content should give people the ability to interpret social change and to reflect critically on their daily lives. This is not a formula for an "easy" curriculum.

are affected by a curricular decision should be involved in making it.[15] This includes parents, concerned citizens, organized labor and other interest groups, and, when possible, the students themselves. I recognize that such broad participation can lead to political conflict and to interminable meetings, but it can also lead to a greater sense of trust and cooperation on the part of all those involved. Indeed, broad participation may be one way to bolster flagging community (and financial) support of public education.

Educators who act on this suggestion must be willing to take risks and to work hard. School officials must aggressively present their curricular proposals and programs to the community — especially to the most disenfranchised groups. They must show their publics what they offer and communicate the justifications for these offerings. They must take criticisms seriously and respond to them honestly.

I have good reasons for making these suggestions. Available evidence suggests that, unless participation in curricular planning is widely shared among teachers, principals, central office staff members, students, and parents, the amount of support for any program is significantly reduced.[16]

In addition, direct parental involvement in the classroom tends to foster both more and longer-lasting changes in the daily activities of teachers. And evidence suggests that *how* a program is carried out is just as important as the specific content of a program.[17] The prospect of a continued decline in educational funding will give impetus to broad participation in the classroom. Parents will have to become more deeply involved, since schools will be hard pressed to afford many of the programs essential to high-quality education. As parents (and the elderly, I hope) volunteer to serve as tutors, as resource people, as counselors, and in other capacities, they will become more knowledgeable and more skillful at dealing with curricular issues. This is an important step toward a genuinely cooperative effort to guarantee high-quality programs for children.

If parental participation in decision making is important, teacher participation is even more important. There tends to be a very high correlation between the involvement of teachers in decisions related to changes in the curriculum and "effective implementation and continuation" of such changes.[18] When we consider going from what *is* to what *should be*, there are few things we know for certain. However, we do have some guidelines for strategies that seem to foster more effective and lasting changes in the curriculum, in what teachers do, and in what students learn. The findings of several studies have suggested that "what should be" will be enhanced to the extent that there is: 1) concrete, extended, and teacher-specific training related to the curricular change; 2) continuing classroom assistance from the district; 3) opportunities for teachers to observe similar projects in other classrooms, schools, or districts; 4) frequent meetings among the people involved that focus on practical problems; 5) local development of materials, insofar as this is possible; and 6) emphasis on teacher participation in curricular decision making.[19] As the financial crunch worsens, these guidelines will become even more important, especially in larger school districts.

So far, I have suggested certain attitudes and activities that should guide our policies on curriculum content, form, and decision making. However, this article would be both incomplete and deceptively simplistic if I did not add that, just as many of the tensions and conflicts over the curriculum arise outside the school, so too do many solutions to these problems require changes in the larger society. The issues of raising students' achievement levels and preventing dropouts are cases in point; solving these problems will require coordinated efforts by the larger society.

Educators have given a good deal of attention to reforming the secondary school curriculum to prevent dropouts. These reforms have had mixed results, in part because focusing solely on internal curricular changes is too limited a strategy. As Christopher Jencks has recently shown, the economic benefits for students who complete secondary school are still *twice* as great for whites as for blacks.[20] Moreover, completing secondary school provides relatively few benefits to students from economically disadvantaged backgrounds. Jencks and his colleagues have summarized their findings

thus: "Apparently, high school graduation pays off primarily for men from advantaged backgrounds. Men from disadvantaged backgrounds must attend college to reap large occupational benefits from their education."[21] Clearly, those minority and economically disadvantaged students who stay in secondary school longer receive few economic rewards for their efforts — regardless of what common sense tells us about the benefits of increased schooling.

I am *not* arguing against making the curriculum more responsive to the needs of such youngsters. Rather, I am saying that, without a societal commitment to altering the structure of the economic marketplace so that these more responsive programs pay off for participants, such efforts may be doomed to failure. Why should such students wish to take part even in well-designed programs, if the statistical probability that these programs will improve their lives is very low? We *do* need better secondary programs, but these programs will be successful only to the extent that students feel that the school has something to offer — both now and for the future.

Improving the achievement of students poses similar problems. We have spent many years and huge sums of money attempting to raise achievement — especially scores on reading tests — through better instructional materials and curricula, more intensive teaching strategies, and so on. Yet these efforts, too, have had mixed results. We may have to take seriously the evidence that suggests a marked relationship between socioeconomic status and achievement in schools. The answers to many of the curriculum questions we face now and will certainly face in the next two decades — such as how best to increase the achievement of minority and poor students — may be found as much in social policies as in better teaching and curricula. As I mentioned earlier, doing well in elementary and secondary school does not guarantee economic success in later life.

The implications of this fact are striking. If we are really serious about increasing student mastery of content, especially among economically disadvantaged groups, then we might consider embarking on a serious analysis of the prevailing patterns of educational financing, of the possibility of redistributing income, and of ways to create jobs that would make possible a decent standard of living for the many families who will suffer the most if the economy continues its downturn. However, such analysis must not serve as an excuse for failing to do the important work of revising the curriculum and teaching practices. My point is that we must take seriously the complications that hinder the schools from reaching their goals. If we are to reach these goals by the year 2000, we will have to consider how our ability to do so is linked to the existing distribution of resources in our society.

We do need better secondary programs, but these programs will be successful only to the extent that students feel that the school has something to offer – both now and for the future.

If our aim is a society in which all people are more equal in their opportunities to experience success and to exercise control over their own destinies, not a society in which the chasms between groups grow larger every day, then we must deal now with these larger social issues. Otherwise, the public will continue to blame the school and its curriculum, its teachers, and its administrators for something over which they have much less control than do other social agencies.

If I am correct that the success of the schools is very much tied to conditions in the larger society, then the training of curriculum specialists, teachers, and administrators for the year 2000 cannot be limited to such things as techniques of teaching, management approaches, and methods of financial planning. We must focus more rigorously — starting now — on the skills of democratic deliberation about such questions as social goals, the proper direction for schools to take, and what we should teach and why.[22] We will never have a curriculum free of tensions and conflicts. And it would probably not be good if we did, since such conflicts demonstrate the vitality of democracy. We must learn to work creatively with conflicts, seeing them not as hindrances but as possibilities for cooperative improvement of education.

The results of the decisions we make today about curriculum policies and classroom practices will be with us in the year 2000, which is just around the corner. It is crucial that we debate now the questions of what we should teach, how it should be organized, who should make the decisions, and what we as educators should and can do about (and in) a society marked by large and growing disparities in wealth and power. I hope that I have stimulated such debate, because that is the necessary first step to taking seriously the question of what the curriculum should be in the year 2000.

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2. For a detailed analysis, see Martin Carnoy and Derek Shearer, *Economic Democracy* (White Plains, N.Y.: M.E. Sharpe, 1980).
3. See Michael W. Apple, *Ideology and Curriculum* (Boston: Routledge and Kegan Paul, 1979).
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10. For an interesting discussion of various forms of meaning and "representation," see Elliot Eisner, *Cognition and Curriculum: A Basis for Deciding What to Teach* (New York: Longman, 1982).
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13. 10 August 1982, Sec. 3, p. 7.
14. Apple, *Ideology and Curriculum*, pp. 6-7.
15. Joseph Schwab, "The Practical: A Language for Curriculum," in Arno Bellack and Herbert Kliebard, eds., *Curriculum and Evaluation* (Berkeley, Calif.: McCutchan, 1977), pp. 26-44.
16. Paul Berman and Milbrey W. McLaughlin, *Federal Programs Supporting Educational Change, Vol. VIII: Implementing and Sustaining Innovations* (Santa Monica, Calif.: Rand Corporation, May 1978), p. 14.
17. Ibid., p. 24.
18. Ibid., p. 29.
19. Ibid., p. 34.
20. Christopher Jencks et al., *Who Gets Ahead?* (New York: Basic Books, 1979), pp. 174-75.
21. Ibid., p. 175. It is unfortunate that most of this research has dealt only with men.
22. Kenneth Zeichner is doing some of the best work on helping teachers to develop the skills of deliberation and reflection. See his "Reflective Teaching and Field-Based Experience in Teacher Education," *Interchange*, vol. 12, no. 4, 1981, pp. 1-22. □

WALTER DICK

Instructional Design and the Curriculum Development Process

For curriculum designed for numerous presentations by a variety of instructors, a systems approach offers schools a cost-effective, integrated process already used by the military, corporations, and third-world nations.

A process for improving student achievement through the systematic design, development, and evaluation of instruction is currently available but not widely used by the public schools. The process is referred to as the *systems approach*, and those who use it are usually referred to as *instructional designers*.

The Instructional Design Process

The "systems approach" label indicates that a set of interrelated procedures is used to achieve a predetermined outcome. The process includes a feedback loop that indicates the extent to which the instruction has been effective and how it might be revised. There is no single systems approach. Andrews and Goodson (1980) have indicated that at least 40 different models have been documented in the literature. However, the models have a striking degree of similarity. Figure 1 is based primarily on the common elements identified by Andrews and Goodson.

Historical Perspective

The general systems approach first became well known to the public when it was applied to the development of large weapons systems by military contractors in the 1950s. However, the term was not used in education until 10 to 20 years later. The '60s saw the emergence of the components that eventually would be combined to become the instructional design systems approach. Interestingly enough, a number of these components were the direct result of work done on various curriculum development projects.

Robert Glaser and researchers at the University of Pittsburgh were among the first to develop individualized instructional packages for elementary children. As they developed instructional objectives, Glaser became aware of the necessity of including test items that directly measured the behaviors described in the objectives. This process of matching test items to objectives became known as criterion-referenced testing and is a key component of the systems approach.

Robert Gagne was a consultant to the Maryland Mathematics Project when he developed his procedures for identifying learning hierarchies. Rather than accepting a list of skills that might have been identified by a subject-matter specialist, for each stated instructional goal Gagne asked the question, "What does the student have to know or be able to do in order to learn to perform the instructional goal?" The answer was the identification of several subordinate skills that, when combined with additional instruction, would lead the student to the instructional goal. This process is repeated for each subordinate skill until basic knowledge and skills are identified. The result is a learning hierarchy that indicates the skills that should be included in the instruction and the sequence in which they should be presented. The hierarchical analysis is one of several analytic techniques that designers use to identify what should be included in an instructional package.

Another basic component of the systems approach is the use of formative evaluation to collect data from students to find out what types of revisions should be made in the instruction. A number of educational researchers became concerned while evaluating the effectiveness of the multimillion dollar science curriculums produced by universities and research and development centers in the early 1960s. Lee Cronbach, Michael Scriven, and others found that many of these products were only effective with the most capable students. They asked why the effects of the instruction were not determined before the materials had been published and used in the classroom. Couldn't there be some earlier form of evaluation that would identify these problems and suggest alternative solutions that could be tested? The answer to this query was the concept of *formative evaluation*—a continuing revision process that is em-

ployed as curriculum is being developed. This process is used not to judge the effectiveness of the instruction but rather to provide information to the developers as to how they can make the instruction more effective.

Applications of the Systems Approach

Although many components of the systems approach to the design of instruction were developed in conjunction with public school curriculum efforts, the largest users of the approach today are undoubtedly the military, business, and industry. There appear to be several reasons for its use by these groups.

- Behaviorally stated instructional goals can be identified and agreed upon.
- It is critical that all learners master whatever tasks they must perform. Our country's defense or a company's profits depend on people who can do their jobs.
- Business, industry, and the military can afford the large start-up costs that frequently are required when the systems approach is used. (*Any* curriculum development process is expensive, however, if the resulting curriculum is ineffective.)
- Public schools typically have not employed persons who are trained to develop curriculum materials. Likewise, teachers typically have not had either the time or the training to engage in large-scale curriculum development efforts.

Given these factors, it is still enlightening to examine several situations in which instructional designers have been involved in developing instruction for public schools. At the most elementary level are those efforts I see each semester when I teach graduate classes in instructional design. The students, who usually include practicing classroom teachers, are required to develop a one-hour self-instructional module. They proceed through the entire process, from identifying an instructional goal to developing tests and instructional materials to trying out the instruction with students. They revise their package, try it out with a larger group, and write a report documenting procedures and outcomes.

Two results of this effort are highly predictable. First, the teacher-designers almost always report large learning gains by students on their criterion-referenced post-tests. Often student performance far exceeds what the teachers had been able to accomplish in the past with other approaches. The other result is the inevitable statement "I'll never be the same teacher again!" Even experienced teachers often gain insights into their students' abilities and the learning process that they had not realized through their normal teaching.

In complete contrast to the one-hour modules constructed by novice designers is the application of systems techniques to large projects, such as the redesign of the Republic of Korea's public school system (Morgan 1981). A team of educators was funded by the Agency for International Development to work with their South Korean counterparts to analyze the educational system and its impact on other aspects of society. A sector analysis identified the need for changes especially at the elementary and middle school levels. The systems approach was used to design schooling that would not cost more in resources and would serve the postwar technological needs of the country by making effective instruction more widely available.

The Korean government established a new organization to implement the country's educational reform, the Korean Educational Development Institute, which was responsible for developing an entirely new curriculum and for training teachers in its use. In a ten-year follow-up study of this extensive project, the Agency for International Development found that even though the student population had grown, student performance had increased from 20 to 40 percent on the various content tests. The Agency considers this to be one of its most successful educational projects and has funded a consortium led by Bob Morgan, director of the Korean project, to implement the same approach in a number of third-world nations.

The projects I have described exemplify the range of applications of the systems approach. A teacher can develop a small package to meet a specific instructional need, or a group of specialists can analyze and develop a new system for an entire country. Most applications today fall somewhere between these two extremes.

The Systems Approach Applied to Curriculum Development

The instructional design process is beginning to make an impact on the curriculum of public schools in the United States. Over a decade ago, Ernest Burkman employed the process to create the Individualized Science Instructional System textbooks that are used in many high schools throughout the U.S. Many of the major components of the systems approach process were used in this project, sponsored by the National Science Foundation, as they were in a number

1. *Needs assessment*. Identifies needs to which instructional solutions may respond.
2. *Instructional analysis*. Identifies content goals and requisite skills learners must achieve to reach instructional goals; sets objectives and standards for meeting them.
3. *Learner analysis*. Identifies learner instructional needs and learner characteristics; develops test instruments to determine if learners can begin instruction.
4. *Instructional setting*. Identifies modes through which instruction will be delivered, such as lecture or self-instruction; develops instructor and student guides and other materials.
5. *Instructional strategy*. Develops strategies to (a) assess learner entry skills, (b) develop and sustain learner motivation, (c) inform learners of informational and behavioral requirements for each objective; provides practice and feedback activities; develops testing plan: pretest, embedded tests, post-test, attitude questionnaire; provides strategies for remediation and enrichment.
6. *Materials development*. Drafts and refines instructional materials through processes of formative evaluation.
7. *Formative evaluation*. Tries instruction in various settings to identify problems and revise materials.
8. *User training*. Provides procedures for use of materials and training of instructors.

To be cost-effective, the instructional design process must meet two critical prerequisites. The first is the establishment of an instructional goal that describes what learners will be able to do when they complete the instruction. Second, the total process is of greatest benefit when a number of instructors offer the instruction numerous times. The systems approach is usually not cost-effective for instruction that will be presented only once to a small group of students.

Fig. 1. The Instructional Design Process

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of other federally funded curriculum projects at that time.

Several state legislatures have required textbook publishers to adopt at least one component of the systems approach—formative evaluation. The state requires publishers to demonstrate that they have formatively evaluated a text before it is offered for adoption.

Each year textbook publishers in Florida submit Learner Verification and Revisions Reports (as the formative evaluation process is referred to in the Florida legislation) to the Department of Education. An analysis of some of these reports (Dick 1986) indicates that few publishers are using a systems approach to develop texts, and that many do not even gather data from student tryouts to revise the texts prior to their publication. In public meetings, publishers' representatives offer various reasons for the quality of reports they submit. However, state textbook councils have begun to reject any texts that are not accompanied by satisfactory formative evaluation reports. Other states are watching with interest the publishers' reactions to the Florida requirements.

Compared with the procedure publishers normally use to develop a text, the systems approach brings more people into the process and costs more money—a cost that would presumably be passed on to the schools. Most texts are written by one or more subject-matter specialists who work with the editorial staff of the publishing company. Publishers assume that the writers are familiar with the characteristics of the learners who will use the text. They assume, in fact, that as the authors are writing they are trying out the materials with the learners. In some situations this is a fair assumption. However, most writers do not have access to the support staff or the range of students needed to effectively try out and revise instruction.

It may be argued that it is not the publishers' responsibility to produce texts that teach but rather only to assemble factually correct information. It is important to distinguish between the ways publishers and instructional designers work. An instructional designer creates a total instructional system that produces certain specified learning outcomes. This system considers the instructor, students, instructional materials, and the learning environment. Publishers, in contrast, claim that they do not produce instructional systems, but only one component, the text, and should not be accountable for the learning taking place. They claim that ensuring learning is the teacher's responsibility.

Instructional Design and the Teacher

An examination of the curriculums of most teacher education programs suggests that, at best, an evolution, not a revolution, is occurring. Most preservice teachers are not being prepared to use the instructional design process. They are now learning, however, to use objectives in the instructional process and to link specific types of instructional strategies to particular learning outcomes. They are not being taught to think about instruction as a systematic process, nor are they provided with the full range of instructional design skills. It appears that it can be useful to the teachers in at least three situations.

- Every year states and local school districts ask teachers to participate in textbook evaluation and selection. Because teachers seldom receive any training for this task, they rely on their knowledge of the content area and their previous experience with the use of textbooks. To prepare more skillful teachers, Florida now requires all members of both state- and district-level textbook selection committees to be trained. The state's training program includes a substantial section on identifying important instructional design characteristics of textbooks. Committee members are encouraged to assess the instructional design characteristics of a text as critically as they would its content.
- As more and more districts engage in their own curriculum development efforts, it can be argued that the teachers involved in such efforts should receive some training in instructional design. Good teachers, who are usually selected to serve on such teams, do not necessarily make good curriculum developers. But with a short period of training, the probability that team members will produce usable materials is substantially increased. Teachers can use texts, such as those by Sullivan and Higgins (1983) and Dick and Carey (1985), to learn the basic instructional design competencies and to apply them to their curriculum development. The time spent in training at the beginning of the project can result in large payoffs in the end.
- A third possible introduction of the systems approach is through general inservice training programs. Anyone interested in viewing teaching as a replicable, systematic process could be shown how to apply instructional design procedures in their classrooms and how to adapt particular components of the process for their own use. Teachers interested in the approach could do follow-up work on their own or in conjunction with other teachers and instructors from nearby colleges and universities.

The Systems Approach and Public Education

Evidence is accumulating that the use of instructional design results in more effective and efficient instruction. However, instructional designers have not found a direct role to play in public education. Rarely are they employed by publishing companies that prepare the textbooks or by the public schools that use the texts within an overall curriculum plan. The positive results of using a systematic design process are such that publishers should add instructional designers to work with teachers on curriculum development projects and to provide inservice training to teachers.□

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Instructional Alignment:

Searching for a Magic Bullet

S. Alan Cohen

When critical features of instructional stimuli match those of assessment, effect sizes routinely reach 1.2 to 3 sigma. An instructional psychologist recasts this classic problem of stimulus control *as* instructional alignment. *This paper describes results of alignment studies that have dramatic implications for researchers and practitioners. One implication embraces the obvious validity of teaching to the test, but poses what is worth testing as instructional design's most awesome challenge.*

In the latest search for educational excellence, perhaps it's time to reconsider an old idea—instructional alignment. *Instructional alignment* describes the extent to which stimulus conditions match among three instructional components: intended outcomes, instructional processes, and instructional assessment (Cohen, 1984a).

The purpose of this paper is to present a new perspective of this old idea by (a) reviewing its history; (b) presenting new data demonstrating that instructional alignment generates larger effects in research and practice for less "cost" than other instructional constructs; and (c) positing implications for both school practitioners and researchers.

Historical Perspective

Carroll's claim that a fundamental component of effective instruction is the degree to which learners have a clear picture of the instructional outcome (Carroll, 1963) was consistent with the times. Those times were the early 1960s, when Skinner's ideas had generated intense interest in task analysis and behavioral objectives in instructional design.

In the applied arena, Skinner's influence on instructional design was best demonstrated in a system called *CRI* or *Criterion Referenced Instruction* (Mager & Pipe, 1974). CRI applied Pipe's servomechanism model (Pipe & Betz, 1971) in which part of output is fed back as input to modify process. According to Pipe, any instructional system must derive from a clear statement of outcome; instruction generates that outcome as demonstrated in a final assessment. The assessment results adjust the outcome, the process, or both until they equal the intended outcome.

CRI was designed to train teachers and other course designers. But it quickly became apparent that school practitioners would not abide the Pipe model. For example, CRI presents the identical task to be learned in both the instructional process as well as in the final assessment, an ideal way to insure the precise match among what is taught, what is measured, and what is intended to be learned. The effect is near perfect learning, with variation in learning rate rather than in "amount" of learning, as expressed in Carroll's model of school learning.

Unfortunately, CRI contradicted the conventional expectation of a normal distribution of assessment results. That distribution requires either poorly taught content, or assessments whose stimulus conditions differ from those taught in the instructional phase. Either option guarantees assessment score variance. CRI practically guaranteed competence, which eliminated or reduced variance, contradicting that conventional expectation.

Although talk of "criterion testing" echoed through the 1960s and 70s, the standard psychometric model nevertheless predominated, as it does today. That model requires variance for a test to demonstrate reliability and validity. Thus, a combination of psychometric necessity and a tradition of "not all shall pass through these gates" doomed CRI to economic failure in the conventional teacher training market. Mager wisely turned away from the schools to industry, government, and business, where it is routinely expected that instruction generates reduced variance. In that setting, CRI continues to flourish a quarter of a century later (Mager & Pipe, 1983).

Meanwhile, in the research arena, new instructional design models had begun to emerge from the Skinnerian bias. For example, as programmed instruction became the cutting edge of instructional psychology, Gilbert (1962) proposed that an efficient way to design effective instruction was to begin at the end. By first developing the final "frame" representing the program's criterion behavior, and working backward to the beginning of instruction, one was more certain that the intended outcome would occur. Although the term *alignment* was not used, Gilbert and his contemporaries recognized the critical role of defining criterion behaviors in terms of stimulus conditions, and that varying those stimulus conditions during instruction could be expected to cause variations from the intended outcome.

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By the mid 1970s, naive elements of programmed instruction had begun to disappear from the schoolbook market. However, its basic principles, especially task analysis, had become the norm for instructional design. For example, Resnick, Wang, and Kaplan (1973) published their classic task analysis of school mathematics learning. By the middle 70s, *task analysis* was a fixture of instructional design (Resnick, 1976; Resnick & Beck, 1976). Task analysts focused on two elements, the stimulus conditions of criterion behaviors, and instructional sequence. Instructional alignment applies these elements.

Although CRI failed to infiltrate the practical arena of public schools, the results of other behaviorists' task analyses caught the rising tide of federal funds targeting the disadvantaged (e.g., Cohen & Hyman, 1977; Cohen & Kaplan, 1975; Cohen & Mueser, 1972; Engelmann, 1970). Despite intense opposition by conventional educators, some American teachers got their first close look at published programs exemplifying the instructional alignment principle. However, their use was usually limited to compensatory and remedial education. These systems rarely became the school's basic programs, and as federal aid declined in the 1980s, such programs were seen less and less in the classrooms.

Thus, the term *instructional alignment* represents a well-established phenomenon in the history of instructional design. Conventional wisdom accepts the logic that effective instruction demands congruence between stimulus conditions of instruction and stimulus conditions of the criterion assessment. The assumption is that the criterion assessment is clearly the intended outcome.

Instructional Alignment Effects

We first spotted the potential of this conventional wisdom as a researchable construct while training doctoral students to routinely test their research hypotheses by predicting critical effect sizes (Cohen & Hyman, 1979, 1981). In a doctoral study of format factors of math word problems that cause difficulty, Cohen & Stover (1981) taught middle graders three types of manipulations to increase their success rates. After three 45-minute lessons, posttest differences exceeded 3.4, 2, and 1.5 sigma. The critical effect size considered educationally significant had been defined as .70 sigma. A statistically significant effect for the number of observations in this study was approximately .50 sigma. What struck us was the magnitude of the effect relative to the minimal instructional effort.

About this same time, evidence was piling up showing large effects in favor of mastery learning programs around the world (Block & Burns, 1976; Hymel, 1982). What struck us was not simply the validation of Bloom's claims about learning for mastery (Bloom, 1976), but the magnitudes of the effects.

We decided to seek a magic bullet—the most potent variable among many underlying mastery learning that contributed most to these observed effect sizes. We hypothesized that whatever its identity, it was also present in the Cohen and Stover study, in which the intervention was not intended to be an example of mastery learning. Although it is true that mastery learning tended to generate effects greater than one sigma, large effects were also common to other approaches to instruction such as tutoring (Bloom, 1984). We looked for a common thread across mastery learning, well-designed instructional experiments, and tutoring.

We noted that a critical feature of mastery learning is the creation of unit tests *before* designing the instructional program (Block, 1971, 1974; Block & Anderson, 1975). We suspected that such an outcome-driven instructional design would generate more aligned instruction than traditional approaches.

We noted that an instructional experiment done as a doctoral dissertation (as in the case of the Cohen-Stover study) would have had to survive close scrutiny by a faculty committee of instructional psychologists. The researcher would have had to satisfy the established criterion of internal validity known as *construct validity of the dependent variable* (Cook & Campbell, 1979). We suspected that dissertation review committees would be particularly sensitive to the necessary match between an experimental intervention and the measure of effect.

Finally, we noted that tutorials are generally efficient pedagogies. Time is rarely spent on classroom rituals; the outcome is defined and the tutor gets right to the task. In short, we thought instructional alignment was a common thread woven into the fabrics of all three phenomena.

We were aware of the *curriculum alignment* literature (Levine, 1982; Niedermeyer, 1979; Neidermeyer & Yelon, 1981) focusing on aligning curriculum to objectives. However, we thought our magic bullet involved a finer tuning implied in task analysis. So, we called our construct *instructional alignment* and began our studies.

Instead of studying the obvious, which had already been established in the literature on instructional "congruence" (Baddeley, 1982; Tulving & Thompson, 1973), we focused on the *degree of effect* relative to instructional effort and such other issues as: (a) the critical features of stimulus conditions that maximize alignment effects; and (b) the alignment effect compared to aptitude effect. Traditional instruction generates .25 to .50 sigma effects. Is the alignment effect as large as it looks—approximately four times this norm?[1]

New Studies in Instructional Alignment

The Koczor Study. Koczor (1984) delivered six typical fourth-grade lessons, one per day, to 25 high achievers. Each 45-minute lesson had no instructional or cognitive relationship to the other; the purpose of the six lessons was to test the alignment effect with as many different fourth-grade skills as feasible within practical limits of a single study.

Immediately after each lesson, students received a posttest, the varying formats of which represented "degree of alignment." For example, one lesson used a paired associates technique that taught how to write Arabic numerals for designated Roman numerals. In the instruction, the Arabic was always presented or written *after* the Roman numerals. One group's posttest was aligned on this factor. In contrast, the misaligned treatment group received a test in which the Arabic numeral came first, and the student had to write the Roman numeral. Most teachers would consider this a *minor* variation of the instruction's stimulus conditions. That *minor* misalignment accounted for a 40% difference in posttest raw scores. Effect sizes representing differences between aligned and misaligned conditions for the lower and average aptitude students were as high as 1.10 and 2.74 sigma.

It is important to note that these "lower" aptitude fourth graders had a mean reading aptitude test score of 4.4 grade level. The so-called "higher" aptitude group had mean aptitude

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scores of grade level 8.6 (s = 1.3). Having come to expect large effects among lower achievers, such large effects observed in very high achievers surprised us.

The Tallarico Study. Tallarico (1984) used instructional alignment to investigate testwiseness effects. With norm referenced standardized tests (NRSTs) of reading achievement, testwiseness training tries to eliminate nonreading factors that control significant amounts of test score variance. To apply the alignment construct to testwiseness instruction requires teasing out critical features of those stimuli that most contribute to this extraneous variance, and then teaching all students to cope with them. If we reduce variance caused by these irrelevances, then we increase test validity; that is, students' scores are more nearly an estimate of true reading performance because extraneous sources of variance have been reduced.

To test the effects of two extraneous variance sources revealed in a task analysis of reading NRSTs (Cohen, 1977), Tallarico randomly divided second graders into three groups. One extraneous stimulus condition, *intent consideration*, required students to choose the best correct answer when two are reasonably correct (Schuller, 1979). The first group learned intent consideration. A second group learned to preread the item stem as a comprehension cue. Both groups learned these strategies under stimulus conditions and on pages simulating NRST conditions. A third group received a placebo, equal in time and in every other respect to the two experimental groups, except lacking testwise instruction.

A three-treatment-by-two-aptitude-level ANOVA indicated that almost 15% of the total sum of squares was explained by intent consideration and stem-cue skill, over and above the reading demand.

Now consider two facts: (a) Each treatment in the Tallarico study consisted of only two 30-minute lessons, a 10-minute demonstration followed by 20 minutes of seatwork drill; and (b) most educators are aware of the learning rate differences between high- and low-aptitude students. This treatment effect exceeded half that aptitude effect in the middle and lower middle class children used in this study.

For lower achievers, the stem-cue strategy group's average score exceeded the 85th percentile of the placebo group. The intent consideration treatment caused a 1.3 sigma effect.

The Fahey Study. Ability of instruction to overcome initial aptitude differences was one goal in a study of alignment effect relative to task difficulty. Using a 3×2×3 mixed ANOVA, Fahey (1986) analyzed interactions among the effects of directed practice under three different stimulus conditions for *understanding main idea*; two levels of aptitude and three levels of alignment (test item formats: aligned with instruction, misaligned #1, and misaligned #2). The first two factors were between-group analyses; alignment effect was a repeated measures.

Community college students were stratified by aptitude and then randomly assigned to one of the three directed practice levels. The research question was not would there be a difference among three types of directed practice, but *how much* of a difference relative to alignment.

Three important findings emerged. First, alignment effect was not observed between one pair of treatment levels which were the "easy" tasks (selecting main idea statements and titles from multiple choices). These lower level demands were easily within the students' learned repertoires. But when the task difficulty increased (producing in writing one's own statement of that main idea), so did the alignment effect.

Second, as anticipated, lower aptitude students did not perform as well as higher aptitude students when test items misaligned with the type of directed practice. As we found in the Koczor and Tallarico studies, alignment is more important to lower than to higher aptitude students.

A third finding was most significant to us. On the more difficult task, alignment was so effective that lower aptitude students performed better under aligned conditions than did higher aptitude students under misaligned. It is important to note that what we structured as "misaligned" is what one normally sees in the average classroom. The observed effect size was 1.2 sigma. With only 1.5 hours of instruction, alignment made enough of a difference to eliminate the expected aptitude gap.

Fahey demonstrated that lower aptitude students can successfully perform higher cognitive tasks when we align instruction. What usually passes for normal instruction in which the stimulus conditions of teaching and testing are slightly misaligned but certainly involve the "same skill" (as it is popularly perceived) can have a deleterious effect on lower achieving students. For low achievers, a little alignment goes a long way.

The Elia Study. The degree of alignment effect was dramatically demonstrated in a fourth study of 45 low socioeconomic level, urban, low achieving fourth graders. Elia (1986) taught meanings of 24 low frequency target words under three contrasting stimulus conditions: phrases, sentences, and paragraphs. In this repeated measures design, each subject learned eight words plus four word variants (e.g., *exist, existing*) under each contrasting condition, one condition per day over three days, in a counterbalanced treatment delivery. The day after each instructional segment, one third of the students was tested with words and variants systematically varied over the three stimulus conditions. Thus, one third of the items generated an aligned condition score, and each remaining third generated scores for misaligned stimulus conditions. In addition, some words aligned with instruction, and some were variants, representing another dimension of misalignment.

A 3×3×2 mixed ANOVA tested individual and interactive effects of two types of alignment. The first three-level factor represented the three contexts or conditions under which the student was taught, words in phrases, or sentences, or paragraphs. The second three-level factor represented the test item formats, words tested in phrases, sentences, and paragraphs. The third two-level factor represented either the word taught or its variant. Thus, some kind of transfer could be demanded via the condition, or the use of a variant, or both.

Overall, Elia reported an alignment effect of .91 sigma. In the phrase condition, alignment effect reached 1.76 sigma. Alignment/misalignment accounted for 16% of the total variance, and under the phrase condition, alignment explained 23% of the total variance.

Discussion and Conclusions

So far, our work with instructional alignment has led to three conclusions:

1. Instructional alignment routinely causes the 4-to-1 Effect, effect sizes ex-

ceeding one and often two sigma, about four times what we ordinarily see in typical classrooms. We routinely observe these large effects from small amounts of instructional effort.

2. *What* to teach is a more difficult question to answer than *how* to teach, considering the fine-tuning demands of task analysis.

3. Lack of excellence in American schools is not caused by ineffective teaching, but mostly by misaligning what teachers teach, what they intend to teach, and what they assess as having been taught. We have extended these conclusions to the bold statement that, in general, most teachers are effective, but usually at the wrong things.

What may these conclusions mean for practitioners? The idea that formal instruction should test what it teaches or teach what it tests is axiomatic. In general it is not being done for four reasons.

First, the level of fine tuning required for instructional alignment is beyond the current repertoire of most teachers, not because they cannot learn the skill, but because it is neither demanded of them nor taught in teacher training.

Second, teaching and assessing have been institutionally dichotomized. Instead of being an integral part of instruction, assessment is separated institutionally as well as in practice. For example, school districts and state education departments maintain separate departments for each domain. As a result, the content of commercially published NRSTs or locally mandated criterion tests usually differ in stimulus conditions from what teachers teach in the classroom. Current tests hide behind a "pseudo alignment" facade by claiming to measure the same "skills" as those taught in the classroom. But an enormous difference exists between what most educators call a skill or an outcome, and the kind of precision implied in the performance of instructional alignment.

Third, the expectation that instruction causes a normal distribution of ability is apparently rooted in a belief in the inevitability of cognitive inequality of human beings. This belief is so all-pervading and insidious, that most teachers and administrators I talk with honestly believe that to teach what we test and test what we teach is unethical because it denies a law of nature! Apparently, to make everyone masters of calculus or appreciators of literature would be a great lie.

Fourth, educators try to avoid responsiblity for what they teach. It is safe to be for teaching "literary appreciation," or "higher cognitive skills," or "aesthetic appreciation of art." However, it is dangerous to define these outcomes by behavioral indicators or with formal assessments making them amenable to instructional alignment. In fact, the popular view is that these fuzzies are beyond precise definition—a convenient strategy to avoid admitting to ourselves what we really mean by such lofty sounding instructional outcomes. Perhaps if practitioners realized the potency of ordinary teachers as manifest in the large effect sizes resulting from aligned instruction, they might dare to be accountable for these outcomes.

Teaching what we assess, or assessing what we teach seems embarrassingly obvious. The fundamental issue is: *What's worth teaching?* This is the same question as: *What's worth assessing?* We can either know what we're doing, or not know what we're doing, but in either case, we'll be doing something to other people's children. Do we not have an ethical obligation to know what we're up to?

The implications for researchers are equally important. Before stumping the country to promote constructs dear to our research hearts, we should consider the effect size we can expect our constructs to cause when put in practice. Presently, we find no other construct that consistently generates such large effects, which is probably why the idea of instructional alignment is so well-entrenched in the conventional wisdom of instructional designers, even if not in the programs currently found in most classrooms.

Are we saying that our alignment research is more important than what other researchers are into?

Certainly not. The purpose of scientific research is to explain phenomena. A small statistically significant effect helps us understand phenomena. Such effects support theoretical models. What we suggest is caution in disseminating information about these results to practitioners who do not appreciate the difference between *significant* effect sizes and statistically *significant* findings. As a result of this lack of appreciation, the obvious conventional wisdom of alignment gets drowned out by the cacophony of information about brain research, learning styles, and so forth, all of which are important to our sciences, but none of which may generate large effect sizes as efficiently as instructional alignment.

Notes

[1]We invented the construct "4-to-1 Effect" to represent this concept (see Cohen, 1984a, 1984b).

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AERA

Winter Training Institute
January 18–19, 1988
see p. 31

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Leadership for Excellence

CURRICULUM IMPLEMENTATION

STRAND WORKSHOP 2

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School Improvement Program

Activity 1: Review and Preview

Goals:
1. To share insights gained from application opportunities from the previous workshop
2. To review goals and agenda

Time: 30 minutes

Materials:
Transparency 1: "Strand Goals"
Transparency 2: "Curriculum Improvement"
Transparency 3: "Aligned Curriculum"
Transparency 4: "Goals/Agenda"
Transparency 5: "Ideas to Share"
Handout 1: "Goals/Agenda"
Handout 2: "Ideas to Share"

Instructions:

1. Using **Transparency 1, Strand Goals**, review the Strand Goals. Briefly indicate the two major concepts dealt with in the last workshop: (1) the curriculum cycle **(Transparency 2, Curriculum Improvement)** as it is applied at either the building or district level, and (2) the issue of curriculum alignment **(Transparency 3, Aligned Curriculum)** which also is a district and building concern.

2. Review the goals and agenda using **Transparency 4, Goals/ Agenda** and **Handout 1, Goals/Agenda**.

3. Use **Transparency 5, Ideas to Share**, and refer participants to **Handout 2, Ideas to Share**. Ask them to take a few minutes to jot down some notes to share on each of the items. Give them about five minutes to do this. Ask for reports.

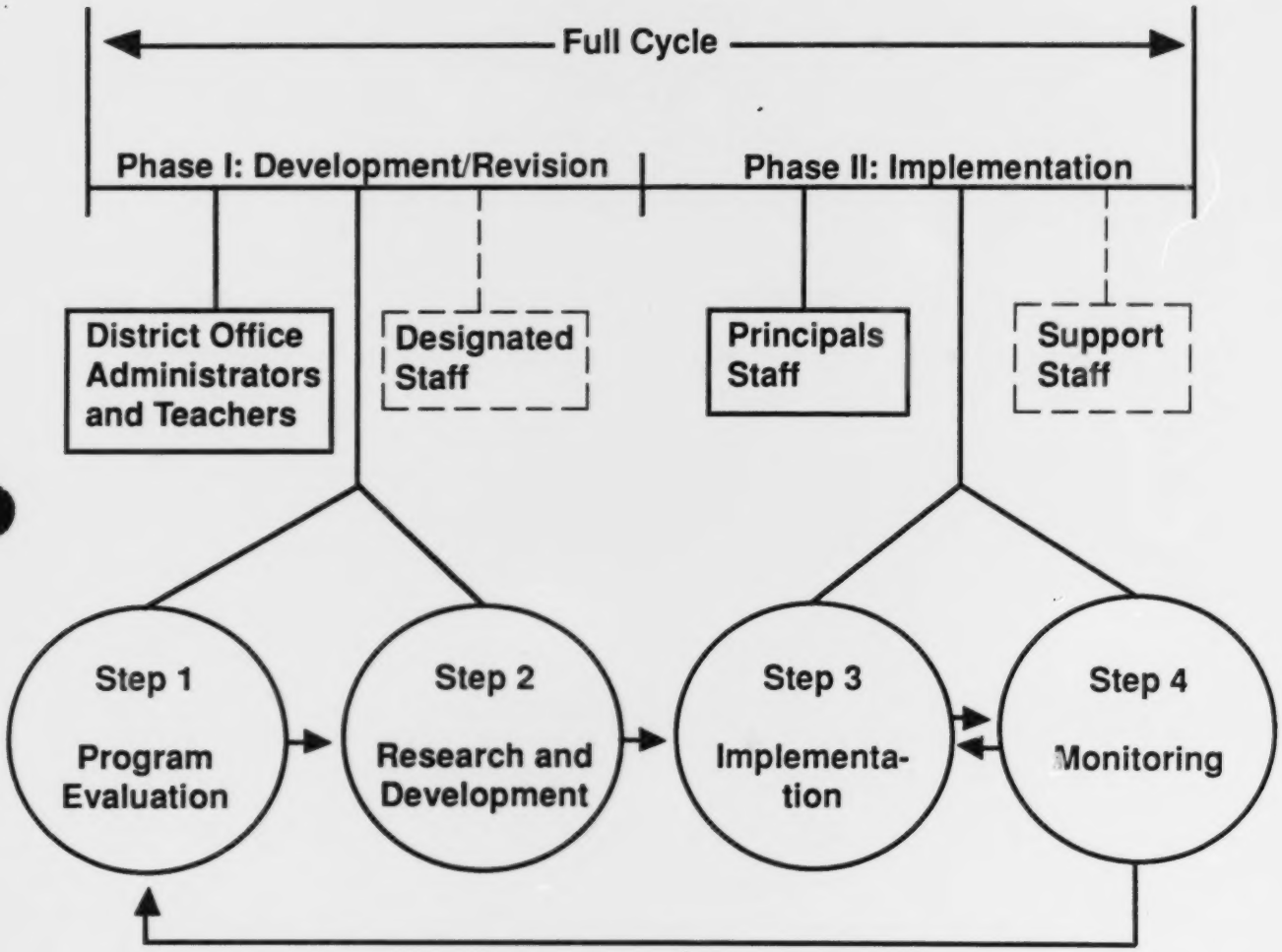
STRAND GOALS

1. To develop a knowledge base of the current research and theory about curriculum alignment and implementation.

2. To work with staff to implement a new or revised curriculum plan.

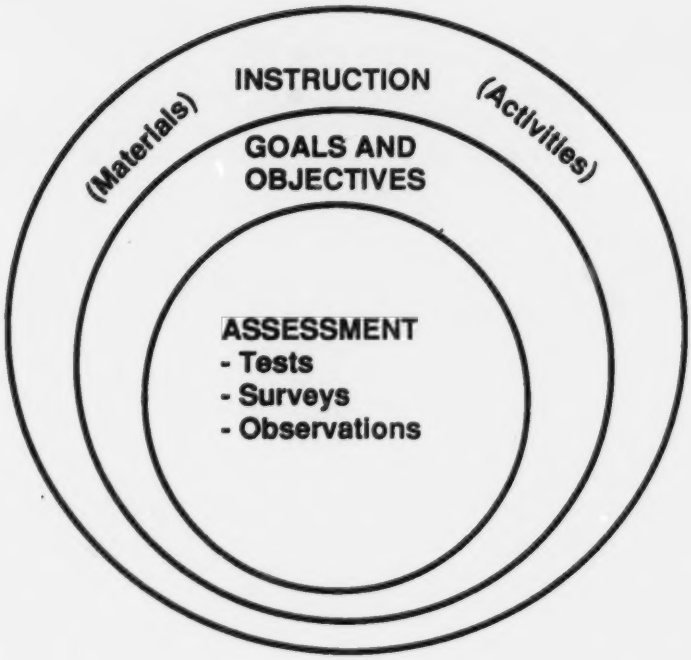
3. To develop a plan to monitor curriculum implementation.

CURRICULUM IMPROVEMENT



ALIGNED CURRICULUM

- **To the extent that objectives, resources, activities, and measures match, students learn better.**
- **Aligned Curriculum**



GOALS

1. To share insights gained from activities done at the building level.
2. To know how to critique a curriculum guide.
3. To learn a process for curriculum decision making.

AGENDA

1. Review and Preview
2. Curriculum Guides

   Break
3. Curriculum Implementation
4. Application Opportunities

IDEAS TO SHARE

1. **Did you choose to do a collegial learning activity around a subject area or around curriculum in general? What was it? What was the staff response to the activity?**

2. **Were you able to reach agreement about the roles and responsiblities of the district and the building for different phases of the curriculum improvement cycle? What were the areas of agreement or disagreement?**

3. **In what area did you decide to pursue the curriculum alignment issue? Were you able to find the necessary supporting documents? If not, which will you have to create or locate?**

4. **What was the general feeling about past curriculum implementation efforts? Are there parts that should be retained? Parts to change?**

GOALS AND AGENDA

Goals

1. To share insights gained from activities done at the building level
2. To know how to critique a curriculum guide
3. To learn a process for curriculum decision making

Agenda

1. Review and Preview
2. Curriculum Guides

   Break
3. Curriculum Implementation
4. Application Opportunities

IDEAS TO SHARE

1. Did you choose to do a collegial learning activity around a subject area or around curriculum in general? What was it? What was the staff response to the activity?

2. Were you able to reach an agreement about the roles and responsibilities of the district and the building for the different phases of the curriculum improvement cycle? What were the areas of agreement or disagreement?

3. In what area did you decide to pursue the curriculum alignment issue? Were you able to find the necessary supporting documents? If not, which will you have to create or locate?

4. What was the general feeling about past curriculum implementation efforts? Are there parts that should be retained? Parts to change?

Activity 2: Curriculum Guides

Goals: To know the quality criteria for an effective curriculum guide.

Time: 90 minutes

Materials: Transparency 6: "Criteria for Effective Curriculum Guides"
Transparency 7: "Evaluation of Curriculum"
Transparency 8: "Evaluation Tally Sheet"
Handout 3: "Criteria for Effective Curriculum Guides"
Handout 4: "Evaluation of Curriculum"
Handout 5: "English 9 - Basic/Remedial"
Handout 6: "Health"
Handout 7-8: "Evaluation of Curriculum"

Instructions:

1. Using **Transparency 6, Criteria for Effective Curriculum Guides**, review the criteria. Refer participants to **Handout 3, Criteria for Effective Curriculum Guides**. Tell participants they are doing this because the curriculum guides they have for their teachers to use will largely impact the decisions they make regarding what students will learn. The higher the quality of the curriculum guides the easier it will be for them to make instructional decisions.

2. Carefully explain **Handout 4, Evaluation of Curriculum**. Clarify any questions they may have.

3. Using **Handout 5, English 9 - Basic/Remedial**, assign small groups (three to four) to take one section each of the evaluation instrument and rate the guide. There may be more than one small group to a section if there is a large group of participants. Have them report out their group rating and give their rationale. Record on **Transparency 7, Evaluation of Curriculum**. Ask for questions.

4. Divide participants into different groups of four. Have them use **Handout 6, Health**, for the first evaluation. They are to evaluate this sample section of a curriculum guide **individually** and then, as a group, they are to discuss their ratings and come to a consensus rating for each of the five criteria.

5. Check for congruence among the groups. Read each number (0-3) and ask one person from each group to raise his or her hand to indicate which rating they gave. Record this on **Transparency 8, Evaluation Tally Sheet**. If there is more than one point disparity, have participants discuss their differences.

6. Using **Handout 7, Evaluation of Curriculum,** have participants rate their own curriculum guide. Then have them trade guides with a partner and rate each other's guides, using **Handout 8, Evaluation of Curriculum.**

7. Have the partners compare their ratings and discuss the results. Check to see if there was close agreement. If there is, it is an indication that they probably understand the concepts. If not, check to see where the misunderstanding is and clarify any issues.

8. Summarize by reminding participants that their responsibility is to see that the curriculum is implemented. The degree to which the curriculum guide meets the quality criteria determines, in part, the ease of implementation and the level of decision making the staff will have to undertake. The next activity will walk them through the decision-making process. As they go through the process they should keep in mind their own curriculum guide that they rated.

CRITERIA FOR EFFECTIVE CURRICULUM GUIDES

1. Clear statement of what is to be taught

2. References to instructional materials

3. References to measurement materials and teaching protocol

4. Instruction for improved alignment

5. Time allocations

EVALUATION OF CURRICULUM AS AN ADEQUATE MANAGEMENT TOOL

Curriculum discipline/area/course _____ Date of review _____

Grades included or level _____ Rater _____

Criteria	0	1	2	3	Points
Clarity and Validity of Objectives	___	___	___	___	___
Congruity of the Curriculum to the Testing/Evaluation Process	___	___	___	___	___
Delineation by Grade of the Essential Skills Knowledge and Attitudes	___	___	___	___	___
Delineation of the Major Instructional Tools	___	___	___	___	___
Clear Linkages for Classroom Utilization	___	___	___	___	___

Total Points _____

EVALUATION TALLY SHEET

CRITERIA	0	1	2	3	Points
1. Clarity and Validity of Objectives					
2. Congruity of the curriculum to the Testing/Evaluation Process.					
3. Delineation by Grade of the Essential Skills Knowledge, and Attitudes.					
4. Delineation of the Major Instruction Roles					
5. Clear Linkages for Classroom Utilization					

CRITERIA FOR EFFECTIVE CURRICULUM GUIDES

When designing a work statement for classroom use, a curriculum guide ought to contain the following:

1. A clear statement of what is to be taught (the work to be done)
2. Specific references to where the work is referenced in student instructional materials
3. Specific references to the manner in which the work will be measured and the context of that measurement
4. Any specific instructions to improve alignment
5. Approximate time to be spent on the work (expressed in ranges)

From: English, Fenwick, *Curriculum Managements for Schools - Colleges - Business*, Springfield, IL, Charles C. Thomas, 1987.

EVALUATION OF CURRICULUM

Curriculum discipline/area/course _____ Date of review _____

Grades included or level _____ Rater _____

Criteria	0	1	2	3	Points
Clarity and Validity of Objectives 0 - no goals/objectives present 1 - vague delineation of goals/objectives 2 - states tasks to be performed or skills to be learned 3 - what, when, how actual standard of measurement performed, and amount of time to be spent of learning each objective clearly stated	___	___	___	___	___
Congruity of the Curriculum to the Testing/Evaluation Process 0 - no evaluation approach stated 1 - some approach to evaluation stated 2 - skill, knowledge, concepts which will be assessed are explained 3 - objective is keyed to performance evaluation and district tests in use	___	___	___	___	___
Delineation by Grade of the Essential Skills Knowledge and Attitudes 0 - no mention of required skills 1 - prior general experience needed 2 - prior general experience needed in grade/level 3 - specific documented prerequisite or description of discrete skills required	___	___	___	___	___

Delineation of the Major Instructional Tools ___ ___ ___ ___ ___

0 - no mention of textbook in tools/materials
1 - textbook mentioned, but must name textbook used
2 - basic textbook and supplementary materials to be used are included
3 - "match" between the textbook and curriculum included objective by objective

Clear Linkages for Classroom Utilization ___ ___ ___ ___ ___

0 - no linkages cited for classroom utilization
1 - overall vague statement on linkage for approaching the subject
2 - general suggestions on approach
3 - specific examples on how to approach key concepts/skills in the classroom

_____
Total Points

From: AASA - Curriculum Audit Seminar, created by Fenwick English.

ENGLISH 9 - BASIC REMEDIAL

SKILLS **SOURCE**

I. Pre-study skills
   - A. Orientation
   - B. Attitude adjustment
   - C. Respect for self and others
   - D. Acceptance of classroom responsibility (e.g. listening, following instructions)

II. Study skills
   - A. Appropriate materials available
   - B. Following instructions
     1. Written
     2. Oral
   - C. SQ3R/SQ4R
     1. Survey
     2. Question
     3. Read
     4. Record
     5. Recite
     6. Review
   - D. Completion of task
   - E. Outlining

III. Test-taking skills
   - A. Awareness of significance of test
   - B. Commitment to scholastic improvement
   - C. Comprehending and following directions
   - D. Budgeting time
   - E. Completing the test

IV. Writing Process
   - A. Writing Readiness - BSAP: Writing (sentence formation)
     1. Simple sentences
        - a. Complete subjects
        - b. Complete predicates
     2. Types of sentences
        - a. Declarative
        - b. Interrogative
        - c. Exclamatory
   - B. Levels of usage - BSAP: Writing (form)
     1. Spoken English
     2. Written English

C.	Sentence improvement - BSAP: Writing (Organization, Content, Handwriting)	*CTBS*, p.165; #'s 51, 52
	1. Sentence completeness	
	2. Sentence combining	
D.	Pre-writing activities	
	1. Suggested strategies	
	a. Brainstorming	
	(1) Class discussion	
	(2) Small group discussion	
	b. Jot list	
	c. Journal writing	
	d. Sentence/paragraph starters	
	e. Free writing	
	f. Framed sentence/paragraph	
	2. Considerations	
	a. Development of topic	
	b. Narrowing of topic	
	c. Audience/purpose	
	(1) Persona	
	(2) Levels of usage	
	(a) Formal	
	(b) Informal	
	(c) Jargon, dialect, slang	
	d. Selection of mode	*Writing T&T*; pp. 7-10
	(1) Narration (emphasis)	*CTBS*, p.166; (see p.17)
	(a) Chronological order #54	
	(b) Transitions	
	(c) Details	*Writing T&T*; pp. 19, 27-32

* first semester only
** second semester only
no * instruction done both semesters

BASE:Basic Skills in English (McDougal, Littell)
CTBS:CTBS Class Management Guide

HEALTH Summer 1988

K-12 OVERVIEW

Grades K-1-2

PHILOSOPHY

The Bethel School District's Health Education Curriculum addresses a range of topics which focus on the total person, integrating the physical, social, emotional and environmental components of human experiences. All such health topics can be described as representing risks and benefits to health. Health education involves a process through which students learn to identify, assess and evaluate options leading to a development of lifelong wellness. In this manner, students learn that a basic set of management skills can be applied to a wide range of health topics which can affect all aspects of one's well being. Health education extends beyond the school to encompass families and communities in order to support and reinforce classroom instruction.

PROGRAM GOALS

1. To provide students with a functional understanding of their body in relationship to everyday living.
2. To promote a positive attitude toward health education which the students will be able to build upon for more advanced study at the secondary level.

ESSENTIAL LEARNING SKILLS

The State Board of Education has defined seven essential learning skills, identifying the most general outcomes expected of students. These essential learning skills are to provide students the skills needed to learn in all content areas.

7. Students will be able to manage personal habits, attitudes, time, and instructional resources constructively in order to accomplish learning tasks.

STATE ESSENTIAL LEARNING SKILLS TESTING

The skills listed by grade level have been determined by the state and district to be basic to all students' learning. It is the responsibility of *all teachers* to provide the instruction necessary for each student to master the Essential Learning Skills.

State testing of health skills will take place at grades 3, 5, 8, and 11. The specific skills to be tested are stated in the section entitled *Health Common Curriculum Goals & Skills.*

COMMON CORE CURRICULUM

The Bethel Health Curriculum Committee reviewed the state health comprehensive goals document, and from these goals determined the specific skills to be taught to meet the state requirements. These specific goals and skills are listed by grade level in the *Health Common Curriculum Goals and Skills* sections.

SAFE LIVING

Content Goal: Students will live a life-style which reflects appropriate safe living behaviors. (Common Core Curriculum Goal 1.0)

STRESSOR/RISK MANAGEMENT

Content Goal: Students will live a life-style which reflects appropriate management of stress or risk-taking behaviors. (Common Core Curriculum Goal 2.0)

PHYSICAL FITNESS

Content Goal: Students will live a life-style which reflects appropriate physical fitness behaviors. (Common Core Curriculum Goal 3.0)

NUTRITION

Content Goal: Students will live a life-style which reflects appropriate eating behaviors. (Common Core Curriculum Goal 4.0)

HEALTH

Summer 1988

K-12 OVERVIEW

GRADE LEVEL	TOPICS OF STUDY
KINDERGARTEN	Safety Growth & Development Social Skills
GRADE 1	Safety Growth & Development Social Skills
GRADE 2	Safety Growth & Development Social Skills

HEALTH Summer 1988

SAFETY

Grade Level: 2

TOPIC	DURATION	MATERIAL
Fire	5-10 days	State Guide Fire Department U.S. Forest Service Lane E.S.D. Health Skills for Life: 2-Goal 5
Personal	10-15 days	Safe Touch You & Your Health - Scott Foresman Lane E.S.D. American Cancer Society & Heart Association kits
Traffic	5-8 days	Police Department/Railroad Lane E.S.D. Frank Schaeffer Materials Bus Drivers Health Skills for Life: 2-Goal 6
Water	2 days	U.S. Coast Guard Lifeguard - City Pool Lane E.S.D.
School	5 days On-going review	Lane E.S.D. Materials

MATERIALS

Adopted Text: *You and Your Health*

Health Skills for Life

Major Supplementary Materials:

Safe touch

Lane E.S.D. (films, videos, teaching packets, posters)

Frank Schaeffer

State guide (Fire, AIDS)

Community resources

American Cancer Society & Heart Association kits

Individual teacher resources

Children Are People

HEALTH

Summer 1988

SAFETY

Grade Level: 2

I - Introduce P - Practice M - Master R - Review
C.C.# - Common Core Curriculum Goal

GOAL 1

Fire Safety: Students will learn to protect themselves and their families from the hazards of fire. (C.C. 1.0)

SKILLS:

(R)	1.1	Demonstrate knowledge of school escape routes and stop, drop, and roll techniques.
(P,M)	1.2	Identify cause and prevention of fires.
(P,M)	1.3	Demonstrate knowledge of home escape routes.
(R)	1.4	Identify family gathering spot.

GOAL 2

Personal Safety: Students will gain awareness and identification of people and/or substances that can cause personal harm. (C.C. 1.0, 2.0)

SKILLS:

(P)	2.1	Identification and awareness of strangers.
(R)	2.2	Identify okay and not okay touches.
(M)	2.3	Demonstrate knowledge of reporting techniques.
(R,I)	2.4	Demonstrate awareness of dangerous substances (*poisons*, drugs, alcohol, and *tobacco*).

GOAL 3

Traffic Safety: Students will know safety procedures involving traffic. (C.C. 1.0)

SKILLS:

(R,M)	3.1	Identify and understand traffic signs and signals.
(R)	3.2	Demonstrate understanding of the rules of the road for walkers and riders.
(R)	3.3	Demonstrate awareness of laws regarding use of seat belts.
(R)	3.4	Demonstrate awareness of rules regarding school bus safety.
(I)	3.5	Demonstrate awareness of safe practices around railroads.

EVALUATION OF CURRICULUM

Curriculum discipline/area/course _____ Date of review _____

Grades included or level _____ Rater _____

Criteria	0	1	2	3	Points
Clarity and Validity of Objectives 0 - no goals/objectives present 1 - vague delineation of goals/objectives 2 - states tasks to be performed or skills to be learned 3 - what, when, how actual standard of measurement performed, and amount of time to be spent of learning each objective clearly stated	___	___	___	___	___
Congruity of the Curriculum to the Testing/Evaluation Process 0 - no evaluation approach stated 1 - some approach to evaluation stated 2 - skill, knowledge, concepts which will be assessed are explained 3 - objective is keyed to performance evaluation and district tests in use	___	___	___	___	___
Delineation by Grade of the Essential Skills Knowledge and Attitudes 0 - no mention of required skills 1 - prior general experience needed 2 - prior general experience needed in grade/level 3 - specific documented prerequisite or description of discrete skills required	___	___	___	___	___

Delineation of the Major Instructional Tools ___ ___ ___ ___ ___

0 - no mention of textbook in tools/materials
1 - textbook mentioned, but must name textbook used
2 - basic textbook and supplementary materials to be used are included
3 - "match" between the textbook and curriculum included objective by objective

Clear Linkages for Classroom Utilization ___ ___ ___ ___ ___

0 - no linkages cited for classroom utilization
1 - overall vague statement on linkage for approaching the subject
2 - general suggestions on approach
3 - specific examples on how to approach key concepts/skills in the classroom

_____
Total Points

From: AASA - Curriculum Audit Seminar, created by Fenwick English.

EVALUATION OF CURRICULUM

Curriculum discipline/area/course _____ Date of review _____

Grades included or level _____ Rater _____

Criteria	0	1	2	3	Points
Clarity and Validity of Objectives 0 - no goals/objectives present 1 - vague delineation of goals/objectives 2 - states tasks to be performed or skills to be learned 3 - what, when, how actual standard of measurement performed, and amount of time to be spent of learning each objective clearly stated	___	___	___	___	___
Congruity of the Curriculum to the Testing/Evaluation Process 0 - no evaluation approach stated 1 - some approach to evaluation stated 2 - skill, knowledge, concepts which will be assessed are explained 3 - objective is keyed to performance evaluation and district tests in use	___	___	___	___	___
Delineation by Grade of the Essential Skills Knowledge and Attitudes 0 - no mention of required skills 1 - prior general experience needed 2 - prior general experience needed in grade/level 3 - specific documented prerequisite or description of discrete skills required	___	___	___	___	___

Delineation of the Major Instructional Tools ___ ___ ___ ___ ___

0 - no mention of textbook in tools/materials
1 - textbook mentioned, but must name textbook used
2 - basic textbook and supplementary materials to be used are included
3 - "match" between the textbook and curriculum included objective by objective

Clear Linkages for Classroom Utilization ___ ___ ___ ___ ___

0 - no linkages cited for classroom utilization
1 - overall vague statement on linkage for approaching the subject
2 - general suggestions on approach
3 - specific examples on how to approach key concepts/skills in the classroom

_____
Total Points

From: AASA - Curriculum Audit Seminar, created by Fenwick English.

Activity 3: Curriculum Implementation

Goals:
1. To review the steps to ensure that curriculum is effectively implemented across grade and subject areas
2. To utilize an efficient process that ensures continuous implementation of curriculum

Time: 30 minutes

Materials:
Transparency 9: "Curriculum Implementation and Improvement"
Transparency 10: "Resources for Determining Objectives"
Transparency 11: "Steps to Curriculum Implementation"
Transparency 12: "Curriculum Implernentation Planning: Coverage"
Transparency 13: "Curriculum Implementation Planning: Priorities"
Transparency 14: "Curriculum Implementation Planning: Ratings"
Transparency 15: "Curriculum Implementation Planning: Summary Form"
Handout 9: "Curriculum Implementation and Improvement"
Handout 10: "Resources for Determining Objectives"
Handout 11: "Steps to Curriculum Implementation"
Handout 12: "Curriculum Implementation Planning: Coverage"
Handout 13: "Curriculum Implementation Planning: Priorities"
Handout 14: "Curriculum Implementation Planning: Ratings"
Handout 15: "Curriculum Implementation Planning: Summary Form"

Instructions:

1. Review **Transparency 9, Curriculum Implementation and Improvement**, and **Handout 9, Curriculum Implementation and Improvement**. State that these are questions that curriculum implementation seeks to answer. The process will vary depending on participants' school and should reflect their unique situations.

2. Display **Transparency 10, Resources for Determining Objectives** and refer to **Handout 10, Resources for Determining Objectives**. Review resources. Have participants check on the handout those resources they have or need to help them answer the questions at the bottom of the page. Indicate that the resources will provide much more than can be accomplished. Their responsibility as staff is to determine priority objectives by changing "should" to "must" in the questions.

3. This process also should give information on the alignment between what they teach and what they test. A decision must be made to test what you teach or to teach what you test or both.

4. Use **Transparency 11, Steps to Curriculum Implementation,** and **Handout 11, Steps to Curriculum Implementation,** to review the steps to curriculum implementation. Tell participants that this process may take as long as a year to accomplish and that it involves the entire staff. It should be done every time a subject area comes up for revision and/or textbook adoption.

5. Use **Transparency 12, Curriculum Implementation Planning: Coverage, Transparency 13, Curriculum Implementation Planning: Priorities; Transparency 14, Curriculum Implementation Planning: Ratings;** and **Transparency 15, Curriculum Implementation Planning: Summary Form.** Walk participants through **Handout 12, Curriculum Implementation Planning: Coverage; Handout 13, Curriculum Implementation Planning: Priorities; Handout 14, Curriculum Implementation Planning: Ratings;** and **Handout 15, Curriculum Implementation Planning: Summary Form.** Indicate that the amount of time and detail they use will depend on their individual building needs.

5. Ask for questions and concerns.

CURRICULUM IMPLEMENTATION AND IMPROVEMENT

Implementation

- What objectives must/should we teach?
- How well are we teaching them?
- How well does the evaluation match the objectives?
- What activities are we using?
- What resources are we using?
- How well do strategies match the objectives?

Improvement

- How well are students mastering objectives?
- Which objectives should be improved?

RESOURCES FOR DETERMINING OBJECTIVES

1. State guidelines
2. District scope and sequence
3. Course or subject goals and objectives
4. Textbook content outlines or list of objectives
5. NRT-CRT testing goals and objectives
6. Teacher-made tests
7. Curriculum mapping data
8. Other

STEPS TO CURRICULUM IMPLEMENTATION

1. Collect resources
2. Prepare list of objectives (H11)
3. Determine how well objectives are taught (H12)
4. Evaluate student mastery (H13)
5. Prioritize objectives (H13)
6. Identify instructional resources (H14)
7. Identify instructional strategies

Curriculum Implementation Planning: Coverage

School: _____
Program: _____ **Course:** _____ **Unit:** ___

Objectives	Very Strong Coverage		Moderate Coverage		Not Covered
	5	4	3	2	1

Curriculum Implementation Planning: Priorities

School: _____ _____

Program: _____ **Course:** _____ **Unit:** ___

Objectives	Importance		Appropriateness	
	1 not Important	5 very Important	1 not approp.	5 very approp.

Curriculum Implementation Planning: Ratings

School: _____
Program: _____ **Course:** _____ **Unit:** ___

Objectives	Average Coverage Rating	Percent Mastering Objective	Need To Improve		
			3	2	1

CURRICULUM IMPLEMENTATION PLANNING: SUMMARY FORM

School _____
Program _____ Course, Grade Level _____ Unit _____

Objectives	Coverage					Percent Mastering	Strong Need	Moderate Need	Maintain Current Effort
	Very Strong		Moderate		None				
	1	2	3	4	5		3	2	1

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CURRICULUM IMPLEMENTATION AND IMPROVEMENT

Implementation

- What objectives must/should we teach?
- How well are we teaching them?
- How well does the evaluation match the objectives?
- What activities are we using?
- What resources are we using?
- How well do strategies match the objectives?

Improvement

- How well are students measuring objectives?
- Which objectives should be improved?

RESOURCES FOR DETERMINING OBJECTIVES

Have	Need	
____	____	1. State guidelines
____	____	2. District scope and sequence
____	____	3. Course or subject goals and objectives
____	____	4. Textbook content outlines or list of objectives
____	____	5. List of objectives measured by standardized norm or criterion-referenced test in your course or subject. Include performance assessments if you have them.
____	____	6. Teacher-made measures. Include any or all performance assessments you may have.
____	____	7. Curriculum mapping data
____	____	8. Other _____

Questions to Ask:

1. What should students know or understand?
2. What should students be able to do?
3. What should students value or appreciate?

Prioritize by Asking:

1. What must students know or understand?
2. What must students be able to do?
3. What must students value or appreciate?

STEPS TO CURRICULUM IMPLEMENTATION

Step 1: Collect all resources that may indicate what should be taught

a. District scope and sequence
b. Course goals and objectives
c. Textbook content outlines or list of objectives
d. List of objectives measured by standardized norm or criterion-referenced test in your course or subject. Include performance assessments if you have them.
e. Teacher-made measures of student achievement such as unit tests, end-of-chapter tests, course finals, and other teacher-made measures. Include any or all performance assessments you may have.

Step 2: Prepare an initial list of the objectives you must teach:

a. Assemble the resources.
b. Make a list of people to include in your group.
c. Give copies of resources to group members for review prior to meeting.
d. Meet to compare objectives from various lists and make a composite list. Check for congruence across lists. Agree on the meaning of various objectives, sort out duplicates and edit language so that a common level of goals and/or objectives is reached. The composite list may be longer than necessary, but that is all right at this point.
e. Put the list of objectives on **Handout 12.** You may need several forms to complete the whole listing.

Step 3: Determine how well the objectives are being taught

This information provides an indication of how well each objective is being covered by the group. It will lead to an understanding of who is teaching what, and why.

This should be determined in an easy, uncomplicated way, since it is only one step in a process of aligning the curriculum. The following scale can be used to get an initial indication of how well each objective is being taught by your group.

Strong Coverage		Moderate Coverage		Not Covered
5	4	3	2	1
Strong coverage means that enough time and attention is given to the objective so that every student masters it.		*Moderate coverage means that the objective is important and a good deal of time and attention is devoted to teaching it. Some students may not master the objective.*		*Not covered means that the objective is not taught.*

Use the following steps to prepare an initial indication of how well your group is teaching each objective:

a. Give each member of your group **Handout 12** filled in with the initial list of basic priority objectives. Ask each group member to rate how well he/she teaches each objective.
b. Meet to compare individual ratings and agree on average ratings for how well each objective is currently being taught.
c. The next step is to prioritize objectives using **Handout 13**. Consider the *importance* of each objective, the *appropriateness* of the objective to the developmental level of the students, and the level of *current coverage*. Divide the objectives into three groups according to their priority in the curriculum:
    1. Objectives that will be taught thoroughly by all teachers
    2. Objectives that will be given moderate coverage
    3. Objectives that will not be covered
d. Transfer objectives in group 1 (taught thoroughly by all teachers) and group 2 (moderate coverage) to **Handout 14**

Step 4: Evaluate how well students are mastering each objective

There are several possible sources for this information:
a. Item analysis reports from standardized norm or criterion-referenced tests
b. Standardized or locally developed criterion-referenced test reports
c. Teacher-made test reports
d. Teacher judgment
e. Student progress charts and/or teacher grade books

Use the following steps to answer the question on mastery of objectives:
a. Determine the data to be used to judge mastery/non-mastery for each objective and set a mastery standard.

b. *If the data are from a standardized assessment procedure*, get the appropriate report, summarize across all teachers teaching the same grade level, course or unit, and transfer the mastery information to **Handout 14** in the "Percent Mastering Objective" column.

c. *If the data are coming from teacher-made assessments or judgments*, have each teacher compile information (percent mastering each objective in their classes) and submit it to the group coordinator for averaging across teachers. Complete average percentages for each objective and transfer them to **Handout 14** in the "Percent Mastering Objective" column.

d. *If no data are available*, the group should decide how to evaluate the priority objectives that they want all students to master. Dates for collection of the data for analysis and reporting should be established.

Step 5: Establish the priority each objective should have for improvement of student performance

This provides agreement on which objectives must continue to be taught as they have been (maintenance) and which objectives must receive more attention so that student performance is improved (a larger percentage of students master the objective).

Establishing priorities for improvement is an individual and group evaluation process. In making the judgment consider the *importance* of a particular objective as well as *current student performance*.

The objectives identified for improvement are those that are very important (all will teach coverage ratings of four or five) and on which students do poorly (low percentage of students mastering).

Use a simple scale to rate the need for improvement on each objective.

Strong Need	Moderate Need	Maintenance Only
1	2	3
Strong need means that the objective is very important and that student performance is weak.		*Maintenance only means that students are currently performing very well on the objective. The objective can be very to somewhat important.*

Use the following steps to arrive at a need for improvement ratings for each objective.

a. Give each individual in your group a copy of **Handout 15**, with objectives, average coverage ratings and percent of students mastering each objective filled in.
b. Ask each individual to consider the importance as indicated by current coverage ratings and student performance and individually to assign need for improvement ratings. At this point they are rating the need for improvement of the whole group, not just for their own students.
c. Meet as a group to share individual priority ratings and reach consensus on average ratings. The consensus ratings will show which objectives the whole group agrees to improve.
d. Have each teacher review the mastery information for his or her own students, and make a list of personal objectives to pursue. Some of these objectives will be from the list agreed to by the group, and some will not.

Step 6: Identify instructional resources used to teach each objective

This results in a list of specific references, including a textbook and page numbers, for information related to each objective.

To answer this question, each teacher will need to have the textbook and all supplementary materials used to teach a subject, course, or unit.

In determining materials used to teach each objective, consider the following questions:

a. Where is the objective covered in the text?
b. Is coverage of the objective adequate?
   — Enough descriptions and examples
   — Clear directions and examples
   — Enough practice exercises, problems, tasks
   — Inclusion of various types of coverage such as introduction, reinforcement, review, etc.
c. Are materials appropriate for the students?
d. What material in the text does not relate to the objective?
e. What supplementary materials are used to teach the objective?
   — Commercial
   — Locally developed
   — In the library
   — In individual teachers' rooms or files

Use the following steps to determine resources used to teach each objective:

a. Give each member a copy of **Handout 15**, with objectives, average coverage ratings (indicating importance) and average need for improvement ratings filled in.
b. Ask each teacher to conduct a preliminary analysis of the text and any commercial or locally made materials used to teach each objective. Make notes on specific pages and/or materials used to teach each objective.
c. Meet and discuss individual analyses and compile a comprehensive list of materials used to teach each objective. Have the list printed, including objectives and institutional materials.
d. Print and distribute copies of the completed form to each group member.

Step 7: Identify strategies, methods and techniques used to teach each objective

This will result in a shared file of teaching strategies, methods, and techniques. The file may contain brief paragraph descriptions of strategies and activities, lesson plans, and/or activity guides.

The materials needed to prepare the shared file include individual teacher's notes and lesson plans, district curriculum guides if they include suggested teaching strategies and activities, commercial activity guides and games, teacher-made activity guides, and games and other materials.

When developing a shared file, consider the following questions:

a. What strategies, methods and techniques have been used successfully to teach each objective or objectives in the past?
b. Does the set of shared teaching activities include alternate methods and modes of instruction?
c. Are visual materials called for in the activities?
d. Are special approaches needed to teach special needs students successfully?
   - — Special education
   - — English language deficient
   - — Chapter 1
   - — Talented
e. Does the set of shared activities include a variety of approaches to keep interest high?

Use the following steps to develop a file of strategies, methods, and techniques to be shared by teachers as they teach the objectives:

a. Meet and discuss alternative ways to share strategies, methods, and techniques. Decide on a format for sharing.
b. Decide on a place to keep the file and a person or persons to organize and manage it.
c. Ask each teacher to collect appropriate descriptions of strategies, methods and techniques and give the items or copies to the person(s) managing the file.
d. Have periodic meetings to describe the items in the file.

Curriculum Implementation Planning: Coverage

School: _____
Program: _____ **Course:** _____ **Unit:** ___

Objectives	Very Strong Coverage		Moderate Coverage		Not Covered
	5	4	3	2	1

Curriculum Implementation Planning: Priorities

School: _____
Program: _____ **Course:** _____ **Unit:** ___

Objectives	1 not important 5 very important	1 not appropriate 5 very appropriate

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Curriculum Implementation Planning: Ratings

School: _____
Program: _____ **Course:** _____ **Unit:** ___

Objectives	Average Coverage Rating	Percent Mastering Objective	Need To Improve		
			3	2	1

CURRICULUM IMPLEMENTATION PLANNING: SUMMARY FORM

School _____

Program _____ Course, Grade Level _____ Unit _____

Objectives	Coverage					Percent Mastering	Strong Need	Moderate Need	Maintain Current Effort
	Very Strong		Moderate		None				
	1	2	3	4	5		3	2	1

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Activity 4: Application Opportunities

Goal: To apply concepts from the workshop

Time: 30 minutes

Materials: Handout 16: "Application Opportunities"
Handout 17: "Survey of Curriculum Practices"
Handout 18: "Action Planning Form"
Handout 19: "Workshop Evaluation Form"

Instructions:

1. Review **Handout 16, Application Opportunities,** and ask for clarifying questions.

2. Review **Handout 17, Survey of Curriculum Practices**. This is an activity to be used as needed.

3. Allow participants about 15 minutes to use **Handout 18, Action Planning Form,** to plan for the action steps they will take when they return.

4. Ask a few participants to identify the curriculum area they will work on and to report on their plans.

5. Have participants fill out and turn in **Handout 19, Workshop Evaluation Form.**

APPLICATION OPPORTUNITIES

1. In the area of curriculum that has been selected for implementation, do the following:

   a. Examine resources for determining goals and objectives (see Handout 10).

   b. Determine level of specificity of goals/objectives that is available for classroom teachers.

   c. List goals/objectives as specified by grade level or course.

   d. Have individual teachers by grade level or course indicate the amount of coverage (emphasis) they give to each goal/objective.

   e. Bring grade level or same course teachers together to agree on emphasis. Identify "must teach" items and put them on a timeline.

   f. Do the same with representatives across grade levels to develop a scope and sequence.

   g. For one unit, have teachers review instructional strategies and materials to determine degree of commonality.

   h. For this unit, have teachers identify the strategies whereby student mastery of the goals/objectives can be evaluated. Have them identify those where assessment instruments will have to be created.

2. Administer **Handout 17, Survey of Curriculum Practices**, to use as an assessment tool for further planning.

SURVEY OF CURRICULUM PRACTICES

INSTRUCTIONS: Below is a list of curriculum practices divided into three parts, one for each level of school organization — district, building and classroom. For each item below, please write a number in the column "Agreement" to indicate how well the practice is implemented. Use the following scale to judge the use of curriculum practices. Use the "Rating" column to rank the practices in order of importance.

Strongly Agree				Strongly Disagree
5	4	3	2	1
The practice is well implemented most of the time		The practice is well implemented some of the time		The practice is well implemented once in a while

Agreement	Rating	
		DISTRICT LEVEL
		Learning Goals/Objectives in our district:
_____	_____	a. Are specified by grade or other organizing entity.
_____	_____	b. Have been reviewed for technical quality, specificity and clarity.
_____	_____	c. Are valid for students for whom they are intended.
_____	_____	d. Are teachable within a specified timeframe.
_____	_____	e. Are sequenced in a manner which reflects the realities of the subject matter.

Agreement	Rating	
		Teaching Resources & Materials in our district:
_____	_____	f. Are identified and/or catalogued in such a way that they can be related to specific goals/objectives.
_____	_____	g. Use alternative media for each goal/objective where possible.
_____	_____	h. Contain accurate information representative of the discipline or technology.
_____	_____	i. Match the developmental levels of students.
		Instructional Strategies & Techniques in our district:
_____	_____	j. Are aligned with goals/objectives.
_____	_____	k. Match the developmental level of students.
_____	_____	l. Have been tested for effectiveness.
_____	_____	m. Make use of alternative approaches.
		BUILDING LEVEL
		Learning Goals/Objectives in the buildings:
_____	_____	a. Are in a written form that is consistent with district goals/ objectives.
_____	_____	b. Are supported by a written statement of priorities which are communicated to staff, students, and community.
_____	_____	c. Are assigned to particular grades, courses, classes, or other units.
		Resources and Materials in the buildings:
_____	_____	d. Are readily available for use in teaching goals/objectives.
_____	_____	e. Are consistent with district policy and guidelines.

Agreement	Rating	
_____	_____	f. Contain accurate content representative of the discipline or technology.
_____	_____	g. Match the developmental levels of students.
_____	_____	h. Are identified and/or catalogued in such a way that they can be linked to goals/objectives.
		Instructional Strategies in the buildings:
_____	_____	i. Are consistent with district policy and guidelines.
_____	_____	j. Are aligned with goals/objectives.
		CLASSROOM LEVEL
		Learning Goals/Objectives in the classroom:
_____	_____	a. Are in a priority order based on district or building guidelines.
_____	_____	b. Are in a priority order based on student achievement data.
_____	_____	c. Are generally selected each day by the teacher.
_____	_____	d. Are sequenced or organized for teaching and learning.
_____	_____	e. Are grouped for teaching and learning into units and lessons.
_____	_____	f. Are displayed in a timeframe or calendar to guide instructional planning.
_____	_____	g. Are aligned with test items.
		Resources and Materials in the classroom:
_____	_____	h. Match the goals/objectives being taught.
_____	_____	i. Are selected according to district or building guidelines.
_____	_____	j. Are matched to the developmental level of students.

Agreement	Rating	
_____	_____	k. Are available in adequate supply for student use.
_____	_____	l. Are available in alternative forms.
_____	_____	m. Are reviewed for content accuracy.
_____	_____	n. Are clearly identified in lesson plans.
		Instructional Strategies in the classroom:
_____	_____	o. Match the goals/objectives being taught.
_____	_____	p. Reflect district or building guidelines.
_____	_____	q. Are described in unit or lesson plans.
_____	_____	r. Require students to respond in ways that are identical to those required by test items.
_____	_____	s. Allow students to demonstrate responsibility and self-reliance.
_____	_____	t. Are available in alternative forms.
_____	_____	u. Are appropriate for the developmental levels of students.

Action Planning Form

Actions (Steps/Procedures)	Timeline Begin	Timeline End	Resources (Materials/Supplies)

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Workshop Evaluation Form

Answer the items according to your own opinions about the work session. There are no right answers. Circle the number on the scale that corresponds to your opinion.

1. Goals of the workshop:

Poor: **1 2 3 4 5** Good:

(Unclear; diverse) *(Clear; shared by all.)*

2. Your feelings during the workshop:

Poor: **1 2 3 4 5** Good:

(I was unable to express my feelings; my feelings were ignored; my feelings were criticized.)

(I freely expressed my feelings; I felt understood; I felt support from the participants.)

3. Organization of the workshop:

Poor: **1 2 3 4 5** Good:

(It was chaotic; very poorly done; I felt manipulated.)

(It was very well organized; it was flexible enough that we were able to influence it; all went smoothly.)

4. Attitude about the workshop:

Poor: **1 2 3 4 5** Good:

(Boring; it was a waste of time; I don't like the way it was presented; disliked it.)

(Interesting; was helpful; liked it)

5. Content of the workshop:

Poor: **1 2 3 4 5** Good:

(Uninstructional; did not learn much; not informative; too much process, not enough content.)

(Learned a lot; was informative; I'll be able to use the content appropriate to our needs.)

6. **Productivity of the workshop:**

Poor: Good:

1 2 3 4 5

(Didn't accomplish goals; no useful ideas emerged; it got us nowhere.)

(Got a lot done; met goals; very fruitful; something will come of this session.)

7. **Leadership of the workshop:**

Poor: Good:

1 2 3 4 5

(Not good at all; poor.)

(Very competent.)

8. **Relevance of the workshop:**

Poor: Good:

1 2 3 4 5

(Does not apply at all to my project work.)

(Content is very useful to my work.)

9. **What was the most important aspect of the workshop?**

10. **What was the least important aspect of the workshop?**

11. **Comments:**

READINGS FOR TRAINERS

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Leadership for Excellence

Reducing the Curriculum

A Process Model

Prepared by a

Task Force
of
The National Association
of
Secondary School Principals

January 1982

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Foreword

The National Association of Secondary School Principals shares with secondary school principals a strong commitment to improving the quality of education. Improving education's quality, however, is difficult today when many schools are experiencing a steady decline in student enrollment and financial resources. School leaders more than ever before must make educationally sound decisions about existing curricular offerings. In such a climate, it is increasingly important to stretch resources and adjust programs to provide for the diverse needs of all students.

The NASSP Board of Directors, at the recommendation of its standing Curriculum Committee, appointed a task force to develop a process model for reducing curriculum while maintaining the elements essential for educational quality.

The task force has approached this assignment with one fundamental principle in mind: quality education. Reducing curriculum is, at best, a painful and tedious endeavor. The task force presents a guide for curricular analysis and decision making that is intended to give direction to principals and school communities in setting curricular priorities, in making reductions, and in finding alternatives.

Every school and district is unique. The process developed by the task force will be most effective in dealing with any necessary reduction of curriculum if it is modified and adapted in the light of local needs.

The NASSP extends its gratitude to members of the Special Task Force and its Review Panel for a remarkably coherent and useful report.

Scott D. Thomson
Executive Director
NASSP

Introduction

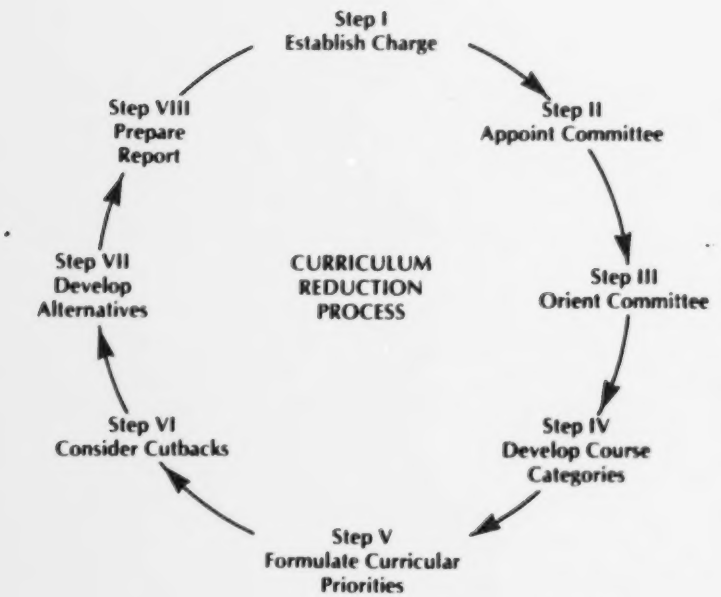
Even in the face of declining enrollment and diminishing financial support to schools, the task force believes that great effort must be made to provide quality education for all students. Its members undertook the development of a process for reducing curricular offerings with the optimistic view that determined educational and community leaders can resolve the most difficult issues. The task force, in presenting this blueprint for action, urges a strong school-community partnership. Quality decisions are the product of planning and process.

When the need to reduce curriculum in the secondary school is evident, the task force recommends a plan of eight sequential steps. This plan will serve as a systematic guide and as a foundation for community, staff, and board support of decisions that must be made. Since cutbacks in courses or programs are almost always controversial, great emphasis is placed on the quality and scope of information, establishment of criteria, and the opportunity to hear all viewpoints. These components, the task force believes, lead to decisions that focus on the school's goals rather than the demands of single-interest groups.

The task force takes the position that new problems—especially those that reflect long-term trends—require solutions that may involve some risk-taking and creativity on the part of educational leaders. In light of this, the task force provides some alternatives to consider when it becomes necessary to reduce significant courses or programs.

A Step-by-Step Procedure for Program Analysis and Decision Making

The task force recommends that eight steps be followed in reviewing district/school programs and courses for possible cutbacks.



Step I: ESTABLISHING THE CHARGE. The governing body must mandate a charge and clearly define it in writing. The charge should include:

- A statement of the task;
- Assignment of the task to a committee, with guidelines specifying how members are to be selected;
- Delineation of committee authority;
- A target date for the committee to present the final report to the superintendent or the governing board.

Step II: APPOINTING THE COMMITTEE. The chief executive officer of the school district in consultation with the building principal(s), or the principal alone in a nonpublic school, should appoint the committee and its chairperson.

- The chairperson should be a local school administrator skilled in conducting group meetings and knowledgeable in curriculum.
- Committee should include members representing a broad spectrum of the school-community population (students, staff, parents, and interested community persons), representing diverse philosophical points of view.

Step III: ORIENTING THE COMMITTEE. At the first meeting of the committee, the formal charge should be delivered personally by the district superintendent or an officer of the governing board. Written copies of the charge should be available so that all interested parties begin with the same understanding of the governing board's expectations.

Clarification of issues and information gathering should be encouraged during this orientation period. Substantive information about the school and curriculum should be distributed to the committee, including:

- Basic demographic information on the school/district:
  - Name of the school and the grade configuration.
  - Past, present, and projected enrollment figures.
  - Graduation requirements.
  - Program of studies.
  - Summary of school standardized achievement test results.
  - Postgraduate follow-up data.
  - District's legal responsibilities and mandates.
  - Pertinent negotiated contract provisions; i.e., class size, etc.
- Current statement of district/school philosophy and objectives.

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Step IV: DEVELOPING COURSE CATEGORIES. The committee should review the information provided in Step III and formulate a set of course categories. While the committee may wish to develop and name its own categories, the task force recommends three levels of priority:

Priority #1—Essential. Mandated courses that are essential to the achievement of district/school goals and objectives. This category includes courses required by law, by board policy, or by an accrediting agency.

Priority #2 — Desirable. Courses fulfilling postsecondary admission requirements or career goals, satisfying high level student interest, and/or having strong community support. These courses would ordinarily be taught depending on sufficient staff and student enrollment.

Priority #3—Specialized. Courses that are offered if funding is available. These include highly specialized electives, courses available through other services in the community, etc. If funding is available, these courses might be taught irrespective of student enrollment.

Step V: FORMULATING THE CURRICULAR PRIORITIES. Concomitant with thoughtfully formulated criteria for the evaluation of courses and programs, the committee must also establish a common basis for placement of courses in these categories. The committee should anticipate the consequences of all proposed subject or program reductions. Several questions should be asked about any proposed reduction.

How will the reduction affect:

- Student learning, achievement, and growth?
- The implementation of established objectives in the district/school?
- The balance of courses/programs in the curriculum?
- Teacher and student morale or school climate (i.e., "old favorite" courses)?
- The needs of particular student groups (i.e., seniors, handicapped, gifted, etc.)?
- The utilization of existing materials, equipment, facilities, and community resources?
- The total cost of offering the program (i.e., will reduction increase administrative cost, demand reorganization, etc.)?

Step VI: CONSIDERING THE CUTBACKS. The committee should ask each department to present its courses of study. The committee should review all courses in the light of the established priorities and place them in the appropriate category.

- The departments should be encouraged to utilize student feedback and a summary evaluation in making reports to the committee. (See Appendices A and B for sample forms.)
- The committee should devise a form for rating each course. (See Appendix C for a sample course rating form.)
- The committee should then deliberate on the department reports and course ratings to place the programs in priority categories. More than one round of discussion may be necessary at this stage.

Step VII: DEVELOPING ALTERNATIVES. The reduction of course offerings may adversely affect the quality of the school's instructional program. Faced with this dilemma, schools/districts will need to explore new avenues to maintain programs that fulfill the school's goals and objectives. The committee should reexamine the utilization of existing resources and the availability of alternative funding or resources. Alternatives might include:

- Seeking federal/foundation/business funding and cooperation.
- Establishing fees for some programs/courses (if legal).
- Providing credit and enrichment activities through community colleges and other accredited institutions.
- Providing credit for independent study.
- Providing credit for evening and summer school courses.
- Establishing cooperative course offerings among area schools and/or districts, including both public and private institutions.
- Exploring the use of differentiated staffing patterns and large-group instruction (for more efficient utilization of existing staff).
- Offering certain courses in alternate years.
- Combining advanced course levels in the same subject area.
- Offering specialized topics in mini-courses or seminars.
- Utilizing more effective media instruction.
- Developing and utilizing subject area resource centers as instructional stations.
- Implementing individually paced learning programs.
- Utilizing volunteers and college interns as staff assistants.

Step VIII: PREPARING THE FINAL REPORT. A preliminary summary of committee recommendations should be developed.

- Copies of the summary should be distributed to the professional staff and the public.

- An open meeting should be held to receive comments from the staff and community.
- Following the open hearing, the committee should prepare a final draft of recommendations.
- The final report should be given to the chief executive officer, who in turn should submit it to the governing board with recommendations for action.

Appendix A
Student Questionnaire for Course Evaluation

This questionnaire will allow you to evaluate the course in which you are now enrolled. It is your opportunity for input and constructive criticism. Read questions carefully and answer them honestly. If you choose, you may sign your name. Comments are encouraged but not required.

COURSE: _____ Grade Level(s) _____

PART I:

Each question below is followed by the numbers 1-4. Circle the number you feel most closely answers the question. Use the following guide in considering your answers.

1) NOT AT ALL
2) TO A VERY LIMITED EXTENT
3) TO SOME EXTENT
4) TO A GREAT DEGREE

1. Did the course stimulate your interest to further your study, either here or beyond high school? 1 2 3 4

Comment: _____

2. Was the material presented in an organized manner? 1 2 3 4

Comment: _____

3. Have you learned what you hoped to learn in this class? 1 2 3 4

Comment: _____

4. Do you think too much information was presented in this course? 1 2 3 4

Comment: _____

5. Do you think too little information was offered in this course? 1 2 3 4

Comment: _____

6. Did this course stimulate curiosity and creativity on your part? 1 2 3 4

Comment: _____

7. Do you feel you have improved your note-taking skills in this course? 1 2 3 4

Comment: _____

8. Do you feel the course presented information that you can use in everyday life? 1 2 3 4

Comment: _____

9. I believe this course will benefit me in the future as a:

a) college student 1 2 3 4
b) employee/worker 1 2 3 4
c) citizen in society 1 2 3 4
d) good consumer 1 2 3 4
e) patron of the arts 1 2 3 4
f) parent 1 2 3 4

Comment: _____

PART II

10. If you could take the course again, what would you like to see changed? Kept the same?

11. What areas of the subject matter gave you the most trouble? Which the least?

12. **Rank the following teaching methods in order of your *personal preference* (1 through 8)**

_____ audiovisual offerings	_____ lectures
_____ class discussions	_____ oral reports
_____ independent work	_____ small-group discussions
_____ lab work	_____ tests

13. **Evaluate the instructional methods used during the course. Use check marks to indicate your answers.**

	Too Much	*Just Right*	*Too Little*	*Not Applicable*
Audiovisual offerings	____	____	____	____
Class discussions	____	____	____	____
Independent work	____	____	____	____
Lab work	____	____	____	____
Lectures	____	____	____	____
Oral reports	____	____	____	____
Small-group discussions	____	____	____	____
Tests	____	____	____	____

14. **On a scale of 1-5 (low to high) rank the teacher in terms of each of the following: Circle your answer.**

Sensitivity to students	1	2	3	4	5
Knowledge of subject	1	2	3	4	5
Effectiveness of teaching	1	2	3	4	5
Fairness in evaluation of students	1	2	3	4	5

15. **Overall, I would rate the educational value of this course as (please circle):**
    1. Poor
    2. Fair
    3. Good
    4. Excellent

Readers may duplicate this form for use in their schools.

Appendix B
Department—Course Rating Sheet

The department should complete this form for *each course* and present it to the Committee at the time of its report.

_____ Name of Course _____ Evaluator

_____ Department _____ Date

Please circle your responses, #4 "Satisfies the criteria completely" to #1 "Does not satisfy the criteria." N/A = Not Applicable.

A. *Level of Appropriateness*

1. Conforms to district philosophy of education	4	3	2	1	N/A
2. Conforms to school philosophy of education	4	3	2	1	N/A
3. Fulfills state and/or local school district requirements	4	3	2	1	N/A
4. Meets accrediting association minimum standards	4	3	2	1	N/A
5. Meets the needs of the learner (psychological, physical, and/or intellectual)	4	3	2	1	N/A
6. Meets the needs of the community (parents, area business community, district residents)	4	3	2	1	N/A
7. Is considered integral to the mastery of the discipline by appropriate subject matter experts from outside the school district (i.e.,subject matter associations, university departments, state education departments, etc.)	4	3	2	1	N/A
8. Meets the requirements of the scope and sequence	4	3	2	1	N/A
9. Meets requirements for admission to institutions of higher education and/or other postsecondary training programs	4	3	2	1	N/A
10. Other _____	4	3	2	1	N/A
Summary	4	3	2	1	N/A

B. *Content Validity*

1. Written course goals are available	4	3	2	1	N/A
2. Written course objectives are available	4	3	2	1	N/A
3. Curriculum materials (texts, films, written handouts) relate to course goals and objectives	4	3	2	1	N/A
4. Scope and sequence relate to course goals and objectives	4	3	2	1	N/A
5. Instruction relates to course goals and objectives	4	3	2	1	N/A
6. Course contributes to the development of the larger subject matter discipline to which it belongs (It sequentially relates to other courses offered in the same department, but does not duplicate or extensively overlap other offerings)	4	3	2	1	N/A
7. Provides an introduction to a broad discipline	4	3	2	1	N/A
8. Is an advanced course (a continuation of an introductory or beginning course)	4	3	2	1	N/A
9. Serves as a prerequisite to other advanced courses and/or programs	4	3	2	1	N/A
10. Admits students selectively based on a specific set of criteria	4	3	2	1	N/A
11. Other_____	4	3	2	1	N/A
Summary	4	3	2	1	N/A

C. *Course Effectiveness*

1. Students successfully completing course have acquired *basic* skills in reading, writing, and/or computation	4	3	2	1	N/A
2. Students successfully completing course have acquired or refined skills that can be used to earn a living and/or that have personal utility for life	4	3	2	1	N/A
3. Students successfully completing course have acquired knowledge, skills, and/or appreciations prerequisite to advanced studies	4	3	2	1	N/A
4. Students successfully completing course have acquired an appreciation for the subject matter	4	3	2	1	N/A
5. Other _____	4	3	2	1	N/A
Summary	4	3	2	1	N/A

D. *Resource Availability*

1. Qualified teacher(s)	4	3	2	1	N/A
2. Qualified support staff (aides, coordinator, etc.)	4	3	2	1	N/A
3. Required texts/supplies/equipment	4	3	2	1	N/A
4. Necessary facilities	4	3	2	1	N/A
5. Other_____	4	3	2	1	N/A
Summary	4	3	2	1	N/A

E. *Type of Budgetary Support*

1. Federal	4	3	2	1	N/A
2. State	4	3	2	1	N/A
3. Local	4	3	2	1	N/A
4. Private	4	3	2	1	N/A
5. Other_____	4	3	2	1	N/A
Summary	4	3	2	1	N/A

General Summary Rating of Course

4 3.5 3 2.5 2 1.5 1

Notes:

Readers may duplicate this form for use in their schools.

Appendix C

Committee—Course Evaluation Sheet

Committee members complete this form *for each course* to guide the discussion in establishing priority among courses.

Name of Course: _____ Grade Level(s) _____

Course Program is (please circle)

a. Mandated by law
b. Local graduation requirement
c. Required by accrediting agency
d. Elective—traditional favorite
e. Elective—specialized

Relative Value of Course to Curriculum (please circle)

1. Poor
2. Fair
3. Good
4. Excellent

A. *Level of Appropriateness*

B. *Content Validity*

C. *Course Effectiveness*

D. *Available Resources*

E. *Type of Budgetary Support*

NOTES:

Readers may duplicate this form for use in their schools.

Leadership for Excellence

CURRICULUM IMPLEMENTATION

STRAND WORKSHOP 3

Prepared by Nancey Olson and Robert E. Blum

Assisted by Bob Lady, Jim Ylvisaker and Ron Smith

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School Improvement Program

Activity 1: Review and Preview

Goals:
1. To review activities related to curriculum implementation resulting from the application opportunities
2. To preview the goals and agenda for this workshop

Time: 30 minutes

Materials:
Transparency 1: "Identifying the Mastery Objectives"
Transparency 2: "Debrief Questions"
Transparency 3: "Strand Goals"
Transparency 4: "Workshop Goals and Agenda"
Handout 1: "Identifying the Mastery Objectives"
Handout 2: "Debrief Questions"
Handout 3: "Goals and Agenda"

Instructions:

1. Ask participants how they know how successfully their new textbook/program adoption is being implemented. What evidence do they have from which to make these judgments?

2. Using **Transparency 1, Identifying the Mastery Objectives,** and **Handout 1, Identifying the Mastery Objectives**, review with participants the reason for working with the staff to identify the objectives that must be taught.

3. Refer to **Transparency 2, Debrief Questions,** and **Handout 2, Debrief Questions**. Ask participants to debrief their meetings with staff to identify goals which must be taught at each grade level and across grade levels. How did the staff respond to the meetings? What were the results? Did their curriculum materials and/or textbooks provide guidelines specific enough that teachers know exactly what the learning expectations are for students at each grade level? How are they going to know if students are achieving the goals? How are they going to know if teachers are following the program guidelines?

4. Review the strand goals using **Transparency 3, Strand Goals**.

3. Preview **Transparency 4, Workshop Goals and Agenda,** and **Handout 3, Workshop Goals and Agenda**, and ask if there are any clarifying questions before they proceed. Answer questions as needed and list those that you hope to address during the workshop.

IDENTIFYING THE MASTERY OBJECTIVES

Consider the following guidelines:

- **essential for all**
- **develop curriculum-based tests and alignment materials**
- **subject matter committees**
- **reviewed by all responsible**

Do not include:

- **too difficult to assess**
- **not considered essential**
- **emphasized at some previous or future grade level**

DEBRIEF QUESTIONS

1. What were the results of staff meetings to identify key objectives for the curriculum area being implemented? How did the staff react?

2. Did the curriculum materials/guides or teachers' editions of textbooks provide guidelines specific enough that teachers knew exactly what the learning expectations were for each grade level or course? If not, what did you do?

3. How will you know if students are achieving the goals identified? How will you know if the teachers are following program guidelines?

4. Did you administer the curriculum survey? What were the results?

CURRICULUM IMPLEMENTATION

STRAND GOALS

1. To develop a knowledge base of the current research and theory about curriculum alignment and implementation.

2. To work with staff to implement a new or revised curriculum plan.

3. To develop a plan to monitor curriculum implementation.

WORKSHOP GOALS

1. To identify the elements that need to be present if curriculum implementation is to take place.
2. To identify areas to monitor when implementing an innovation.
3. To know how to monitor student outcomes in a curriculum area.
4. To understand the nature of barriers to change and learn ways to overcome barriers to change.

AGENDA

1. Review and Preview
2. Elements of Curriculum Implementation
   Break
3. Monitoring Innovative Implementation
4. Monitoring Student Outcomes
   Break
5. Barriers to Implementation
6. Breaking Barriers to Change
7. Action Planning

IDENTIFYING THE MASTERY OBJECTIVES

Consider the following guidelines:

- Mastery objectives are those that are essential for all and require careful structuring.
- The list of mastery objectives will be used in developing both the curriculum-based tests and the teachers' alignment materials.
- If the district has not developed a curriculum that focuses on mastery objectives, subject matter committees should be assigned the task of identifying key objectives.
- Once identified, objectives should be reviewed by all who are responsible for teaching them—grade level teams, across grade level teams, and departments.

Three types of objectives which should probably not be included in the mastery list:

- Objectives that are too difficult to assesss with district-made tests.
- Objectives that are not considered essential for all students.
- Objectives which have been emphasized at some previous grade level or which will be emphasized at some future grade level.

DEBRIEF QUESTIONS
Application Opportunities

1. What were the results of staff meetings to identify key objectives for the curriculum area you are implementing? How did the staff respond?

2. Did the curriculum materials/guides or teachers' editions of your textbooks provide guidelines specific enough that teachers knew exactly what the student learning expectations were? If not, what did you do?

3. How will you know if students are achieving the goals identified? How will you know if teachers are following program guidelines?

4. Did you administer the curriculum survey? What were the results?

GOALS AND AGENDA
Strand Goals

1. To develop a knowledge base of the current research and theory about curriculum alignment and implementation

2. To work with staff to implement a new or revised curriculum plan

3. To develop a plan to monitor curriculum implementation

Workshop Goals

1. To identify the elements that need to be present if curriculum implementation is to take place
2. To identify areas to monitor when implementing an innovation
3. To know how to monitor student outcome in a curriculum area
4. To understand the nature of barriers to change and learn ways to overcome barriers to change

Agenda

1. Review and Preview
2. Elements of Curriculum Implementation

   Break
3. Monitoring Innovative Implementation
4. Monitoring Student Outcomes

   Break
5. Barriers to Implementation
6. Breaking Barriers to Change
7. Action Planning

Activity 2: Elements of Curriculum Implementation

Goal: To identify the elements that need to be present if curriculum implementation is to take place.

Time: 45 minutes

Materials: Transparency 5: "Ensuring Implementation"
Handout 4: "Elements of Curriculum Implementation"
Handout 5: "Ensuring Implementation"

Instructions:

1. Using **Handout 4, Elements of Curriculum Implementation**, review each of the elements that need to be in place for the curriculum to be implemented.

2. Using **Transparency 5, Ensuring Implementation**, ask participants to use **Handout 5, Ensuring Implementation**, and ask them to individually identify the five elements that they feel are most frequently overlooked and five that they believe are most essential to successful implementation.

3. Ask participants to identify elements where they have checked both. Arrange in groups of two or three and compare their results to see if any of the same elements where both were checked were identified by all in the group. Ask participants to brainstorm ways to ensure implementation of particular elements. If they have more in common, choose one from each list.

4. Have each group report.

5. Remind the group that this is not a sequence of steps, but that all elements must be in place and that efforts to maintain many are ongoing.

ENSURING IMPLEMENTATION

Elements	Most Over-looked	Most Impt.	Possible Solutions
• Perceived need • Changes clearly explained • Materials available • Past change efforts successful • Principals trained and responsible • Teacher input and staff development • School board and community support • Implementation plan includes monitoring • Prevention of teacher "overload" • Principals advocate and support curriculum • Sharing opportunities and support			

ELEMENTS OF CURRICULUM IMPLEMENTATION

A high level of curriculum implementation can be expected if...

1. Teachers perceive the need for the new curriculum.
2. The curriculum changes are not unduly complex and are clearly explained to teachers.
3. Quality materials supporting the new curriculum are available to teachers.
4. Previous attempts in the district to change curricula have been successful.
5. Principals are strongly encouraged to take responsibility for implementing the new curriculum in their schools and are given the necessary training.
6. Teachers have had substantial input into the new curiculum and are provided with the necessary staff development.
7. There is strong school board and community support.
8. There is a carefully developed implementation plan which makes specific provisions for monitoring implementation.
9. Administrators take the necessary steps to prevent and respond to the problem of "overload" when teachers feel overwhelmed and overworked in implementing the new curriculum.
10. Principals play an active role in advocating and supporting the new curriculum.
11. Teachers have an opportunity to share ideas and problems with each other and receive support from supervisors and administrators.

Adapted from Fullan, F. M., and Park, P. *Curriculum Implementation: A Resource Booklet.* Toronto, Ontario: Ontario Institute for Studies in Education, 1981.

ENSURING IMPLEMENTATION

Elements	Most Overlooked	Most Important	Possible Solutions
Perceived need			
Changes clearly explained			
Materials available			
Past change efforts successful			
Principals trained and responsible			
Teacher input and staff development			
School board and community support			
Implementation plan includes monitoring			
Prevention of teacher "overload"			
Principals advocate and support curriculum			
Sharing opportunities and support			

Activity 3: Monitoring Innovation Implementation

Goal: To identify areas to monitor when implementing an innovation

Time: 45 minutes

Materials: Transparency 6: "Innovation Configuration"
Transparency 7: "Program Checklist"
Transparency 8: "Program Checklist Form"
Transparency 9: "Stages of Concern"
Transparency 10: "Levels of Use of the Innovation"
Handout 6: "Innovation Configuration"
Handout 7: "Program Checklist"
Handout 8: "Program Checklist Form"
Handout 9: "Stages of Concern"
Handout 10: "Levels of Use of the Innovation"

Instructions:

1. Indicate that elements #2, 5, 6, 10, 11 from **Handout 4, Elements of Curriculum Implementation**, are related to both principals and teachers having a clear understanding of the curriculum and opportunities for input. The next activity will look at one way to accomplish both.

2. Tell participants that monitoring the implementation plan is based on several assumptions. The first of these is that the staff has been sufficiently prepared to implement the new program. Indicate that before implementation can take place, everyone involved must be sure that they understand the critical components of the program. They should come to some agreement as to what is critical to the program and what is related, and there should be a written description of what the program would look like if it is being implemented.

3. Using **Transparency 6, Innovation Configuration,** and **Handout 6, Innovation Configuration**, review the use of the terms on the list. Explain that innovation, as used here, means anything that is new to the users—for them it is a new program or method that they have not used before.

4. Use **Transparency 7, Program Checklist,** and **Handout 7, Program Checklist,** to illustrate what a program checklist might look like.

5. Ask the participants to name their most recent textbook/program adoption or other implementation effort that has taken place districtwide. Using **Transparency 8, Program Checklist Form** and **Handout 8, Program Checklist Form**, have them list the components of the program. Then, in small groups, have them identify a critical component and possible variations that may occur. Indicate that this kind of clarification is necessary before monitoring.

6. Refer participants to **Transparency 9, Stages of Concern,** and **Transparency 10, Levels of Use**, and to **Handout 9, Stages of Concern,** and **Handout 10, Levels of Use**. Explain how these are used and refer participants to the recent ASCD publication, *Taking Charge of Change* by Shirley Hord, William Rutherford, Leslie Huling-Austin, and Gene Hall. Reviewing these materials takes more time than is available here, but anyone seriously interested in monitoring implementations should read the book or attend a workshop on the procedure.

INNOVATION CONFIGURATION

1. Innovation Configuration
2. Component
3. Critical and Related Components
4. Variations
5. Fidelity

Leadership for Excellence

Figure 2.3. (TSP) Science Program Configuration Checklist

Component 1: Units Taught				
(1)	(2)	(3)	(4)	(5)
All units and most activities are taught	Most units and activities are taught	Some units are taught	A few selected activities are taught	No units or activities are taught

PROGRAM CHECKLIST FORM

For: _____

Component 1

Component 2

Component 3

Component 4

Component 5

_____ Variations to the right are unacceptable; variations to the left are acceptable.

_ _ _ _ _ Variations to the left are ideal, as prescribed by the developer.

* Denotes critical components.

STAGES OF CONCERN: TYPICAL EXPRESSIONS OF CONCERN ABOUT THE INNOVATION

Stages of Concern		Expressions of Concern
6	Refocusing	I have some ideas about something that would work even better.
5	Collaboration	I am concerned about relating what I am doing with what other instructors are doing.
4	Consequence	How is my use affecting kids?
3	Management	I seem to be spending all my time in getting material ready.
2	Personal	How will using it affect me?
1	Informational	I would like to know more about it.
0	Awareness	I am not concerned about it (the innovation).

Procedures for Adopting Educational Innovations Program
Research and Development Center for Teacher Education
The University of Texas at Austin

LEVELS OF USE OF THE INNOVATION: TYPICAL BEHAVIORS

Level of Use		Behavioral Indices of Level
6	Renewal	The user is seeking more effective alternatives to the established use of the innovation.
5	Integration	The user is making deliberate efforts to coordinate with others in using the innovation.
4b	Refinement	The user is making changes to increase outcomes.
4a	Routine	The user is making few or no changes and has an established pattern of use.
3	Mechanical Use	The user is making changes to better organize use of the innovation.
2	Preparation	The individual is preparing to use the innovation.
1	Orientation	The individual is seeking out information about the innovation.
0	Nonuse	No action is being taken with respect to the innovation.

CBAM Project
Research and Development Center for Teacher Education
The University of Texas at Austin

INNOVATION CONFIGURATION

1. Innovation Configuration: the patterns of innovation use that result when different teachers put innovations into operation in their classrooms

2. Component: major operational features or parts of any innovation
   Example of an instructional innovation, i.e., continuous progress
   - Component 1: Use of Instructional Narratives
   - Component 2: Grouping of Students
   - Component 3: Testing and Use of Test Results

3. Critical and Related Components:
   Critical - those essential to the innovation
   Related - those not considered essential, but recommended by the developer or facilitator as "nice to have"

4. Variations: different ways in which a teacher may put a component into operation
   Example from Component 1 (above): Use of Instructional Materials
   a. program materials only
   b. program materials plus basic text
   c. text only
   d. teacher-made only

5. Fidelity: use of a program exactly as it was envisioned by an innovation developer

Program Checklist

Figure 2.3. (TSP) Science Program Configuration Checklist

*Component 1: Units Taught				
(1)	(2)	(3)	(4)	(5)
All units and most activities are taught	Most units and activities are taught	Some units are taught	A few selected activities are taught	No units or activities are taught
*Component 2: Use of Materials				
(1)	(2)	(3)		
Students are constantly manipulating science materials	Only the teacher and selected students handle the materials most of the time	Typically, the teacher does demonstrations and the students watch		
Component 3: Student Grouping				
(1)	(2)	(3)		
Students work individually and in small groups	Students are kept in 3–5 permanent groups	The whole class is taught as a group		
*Component 4: Process/Content Emphasis				
(1)	(2)	(3)	(4)	
Science content and science processes are emphasized equally	Science content is given major emphasis	The processes of science are given major emphasis	Memorization of facts and reading about science are emphasized	
*Component 5: Assessment				
(1)	(2)	(3)	(4)	
All TSP assessment activities are used	Some TSP assessment activities are used	Teacher-made tests are used on a regular basis	Tests are not given regularly	

———— Variations to the right are unacceptable; variations to the left are acceptable
. . . . . Variations to the left are ideal, as prescribed by the developer

*Denotes critical components

Leadership for Excellence

Figure 2.3. (TSP) Science Program Configuration Checklist

Component 1: Units Taught				
(1)	(2)	(3)	(4)	(5)
All units and most activities are taught	Most units and activities are taught	Some units are taught	A few selected activities are taught	No units or activities are taught

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PROGRAM CHECKLIST FORM

For: _____

Component 1

Component 2

Component 3

Component 4

Component 5

_____ Variations to the right are unacceptable; variations to the left are acceptable.

_ _ _ _ Variations to the left are ideal, as prescribed by the developer.

* Denotes critical components.

STAGES OF CONCERN:
TYPICAL EXPRESSIONS OF CONCERN ABOUT THE INNOVATION

Stages of Concern		Expressions of Concern
6	Refocusing	I have some ideas about something that would work even better.
5	Collaboration	I am concerned about relating what I am doing with what other instructors are doing.
4	Consequence	How is my use affecting kids?
3	Management	I seem to be spending all my time in getting material ready.
2	Personal	How will using it affect me?
1	Informational	I would like to know more about it.
0	Awareness	I am not concerned about it (the innovation).

Procedures for Adopting Educational Innovations Program
Research and Development Center for Teacher Education
The University of Texas at Austin

LEVELS OF USE OF THE INNOVATION: TYPICAL BEHAVIORS

Level of Use		Behavioral Indicies of Level
6	Renewal	The user is seeking more effective alternatives to the established use of the innovation.
5	Integration	The user is making deliberate efforts to coordinate with others in using the innovation.
4b	Refinement	The user is making changes to increase outcomes.
4a	Routine	The user is making few or no changes and has an established pattern of use.
3	Mechanical Use	The user is making changes to better organize use of the innovation.
2	Preparation	The individual is preparing to use the innovation.
1	Orientation	The individual is seeking out information about the innovation.
0	Nonuse	No action is being taken with respect to the innovation.

CBAM Project
Research and Development Center for Teacher Education
The University of Texas at Austin

Activity 4: Monitoring Student Outcomes

Goal: To know how to monitor student outcomes in a curriculum area

Time: 45 minutes

Materials: Transparency 12: "Functions of Evaluation"
Transparency 13: "Ways to Assess Student Outcomes"
Transparency 14: "Developing Curriculum-Based Tests"
Handout 12: "Functions of Evaluation"
Handout 13: "Ways to Assess Student Outcomes"
Handout 14: "Developing Curriculum Based Tests"

Instructions:

1. Using **Handout 12 and Transparency 12, Functions of Evaluation**, review the rationale for providing evaluation on an ongoing basis.

2. Using **Transparency 13, Ways to Assess Student Outcomes** and **Handout 13, Ways to Assess Student Outcomes**, ask participants to brainstorm a list of ways to assess student outcomes in a curriculum area. Divide the chartpack into three areas: knowledge, skills and processes, values and attitudes. Record the responses in each area.

3. Have participants identify those that would be the most valid and reliable measures of the mastery objectives as identified earlier. Put a check by these.

4. Tell participants that the most valid and reliable measures in the curriculum alignment process are curriculum-based tests.

5. Use **Transparency 14, Developing Curriculum-Based Tests,** and **Handout 14, Developing Curriculum-Based Tests,** to illustrate the procedures that one should go through to develop instruments to monitor student progress in achieving curriculum goals.

6. Indicate that developing curriculum-based tests is time consuming and may require some technical assistance, but that the rewards are worth the effort. Talk about resources available to them in their region or school district.

FUNCTIONS OF EVALUATION

Our experiences suggest that unless the school has translated the objectives into specific and operational definitions, little is likely to be done about the objectives. They remain pious hopes and platitudes.

--Benjamin S. Bloom (1961)

1. **To inform learners of their attainment**
2. **To diagnose areas of strength and weakness**
3. **To guide decisions about the student's future**
4. **To inform interested individuals and agencies of student competence**
5. **To provide feedback into the instructional system**
6. **To provide an operational target for the learner**
7. **To promote minimal educational equality**

WAYS TO ASSESS STUDENT OUTCOMES

Knowledge and Understanding

Skills and Processes

Values and Attitudes

DEVELOPING CURRICULUM-BASED TESTS

1. Determine test scope and frequency.
2. Determine how many forms of each test will be required.
3. For each objective, develop a pool of test items. Check for validity.
4. Construct the pilot forms of the tests by selecting a sample of test items, grouping them in some logical manner, and preparing clear instructions.
5. Develop a scoring system which will provide administrators, teachers and students with the information they require in order to understand and use test results.
6. Have content specialists review the tests to ensure that items are valid, that the answers are correct, and that the sampling reflects curricular priorities.
7. Administer the pilot forms of the test to groups of students in order to measure test reliability.

FUNCTIONS OF EVALUATION

"Our experiences suggest that unless the school has translated the objectives into specific and operational definitions, little is likely to be done about the objectives. They remain pious hopes and platitudes." (Benjamin S. Bloom)

1. To inform learners of their attainment

   "Knowledge of results" is one of the cornerstones of learning theory. Knowing whether one has attained a goal, or by how much it has been missed or exceeded, has been shown to be an important incentive in human performance, especially when knowledge of results quickly follows performance (Hilgard and Bower, 1966).

2. To diagnose areas of strength and weakness

   It is not enough for evaluation merely to indicate that the student has "passed" or "failed." If remediation is to be effective in bringing the student up to the required standard, both the instructor and the student must know the areas of student weakness; if remediation is to be efficient, they must also know the areas in which the student is competent.

3. To guide decisions about the student's future

   Adequate academic and career guidance must be based, at least in part, on sound data about the learner's aptitudes, interests and attainments. At some point, decisions will be made to include some aspirants, and to exclude others, from certain courses, programs, institutions and careers. Whether such decisions are made by educators, by students, or by others, if they are not based on valid assessment, they will be open to question.

4. To inform interested individuals and agencies of student competence

   Parents have a right, and in fact a responsibility, to discover what their children have learned in school. Employers need to know what capabilities potential employees have acquired. Taxpayers are entitled to know what effects schools they are supporting are having on students. Universities, in order to design appropriate programs, need to know what attainments incoming students possess, just as secondary schools need data on the abilities and background of elementary school graduates.

5. To provide feedback into the instructional system

   An instructional system can achieve its potential only if the results of instruction are monitored and corrective action taken when necessary. Professional educators do not blame the students or themselves if objectives are not achieved. They first remedy the learner deficiency, then revise the instruction. Their professional life is a repetetive cycle of develop—try out—evaluate—revise.

6. To provide an operational target for the learner

   Ideally, students should be motivated most strongly by wanting to learn something that they believe worthwhile. Thus, a group of students may be motivated by the objective, "To learn to swim." But in practice, they will often tend to concentrate on the measure of assessment, for example, "To swim three lengths of the pool in five minutes on April 23;" and this operational target will act as the organizing principle behind their efforts to develop strength and skill in performance. Because this tendency to focus on the test is quickly learned by students and reinforced in most schools, teachers should remember that the function of instruction is to enable the learner to develop a capability, not to pass a test. They should avoid using examinations as a system of rewards and punishments.

7. To promote minimal educational equality

   Differences in the quality of education will always persist between different regions, different schools and different classrooms. In the absence of achievement data, the nature and extent of such differences will be obscured. Underachievement resulting not from student deficiency but from inadequate services may be unrecognized; neither the public nor the administrators will have the information required to make appropriate decisions. Objective data on the present level of achievement is therefore an important foundation for securing equality of educational opportunity.

WAYS TO ASSESS STUDENT OUTCOMES

Knowledge and Understanding
Skills and Processes
Values and Attitudes

DEVELOPING CURRICULUM-BASED TESTS

1. Determine test scope and frequency.

2. Determine how many forms of each test will be required.

3. For each objective, develop a pool of test items. Check for validity.

4. Construct the pilot forms of the tests by selecting a sample of test items, grouping them in some logical manner, and preparing clear instructions.

5. Develop a scoring system which will provide administrators, teachers and students with the information they require in order to understand and use test results.

6. Have content specialists review the tests to ensure that items are valid, that the answers are correct, and that the sampling reflects curricular priorities.

7. Administer the pilot forms of the test to groups of students in order to measure test reliability.

Activity 5: Barriers to Implementation

Goals:
1. To become familiar with the different types of people who will be involved with implementation of an innovation
2. To know how to intervene at different stages of concern to ensure implementation of an innovation

Time: 30 minutes

Materials: Transparency 15: "Barriers to Implementation"
Transparency 16: "Attitudes to Innovation"
Handout 15: "Barriers to Implementation"
Handout 16: "Attitudes to Innovation"

Instructions:

1. Use **Handout 15 and Transparency 15, Barriers to Implementation** to illustrate that implementation is a crucial point in the curriculum improvement cycle. Indicate that the process of implementation is one of persuading people to make certain decisions.

2. Show **Transparency 16, Attitudes to Innovation** and review the categories, referring participants to **Handout 16, Attitudes to Innovation**. Ask them to estimate the percentage of their staff that falls into each category, then show them the graph that illustrates a typical distribution.

3. Have them discuss this in small groups, comparing percentages and anticipating on a scale of 1 (very easy) to 5 (very difficult) the ease of implementing a new curriculum. Have the groups report out similarities or differences.

BARRIERS TO IMPLEMENTATION

"The voyage from first identification of student need to eventual learner achievement is often stormy, but more good curricula sink without a trace on the shoals of implementation than at any other point."

David Pratt in *Curriculum: Design and Development* by William Morse, p. 401

"I think it is time we dreamed a new dream about curriculum change. This time our ideal should recognize that curriculum changes are necessarily subject to the operation of enormously powerful social forces that cannot possibly be brought under the control of any technical procedure or systematically designed process."

Pratt (p. 425) quoting Decker Walker from "Toward Comprehension of Curricular Realities," in *Review of Educational Research*, 1976.

ATTITUDES TO INNOVATION

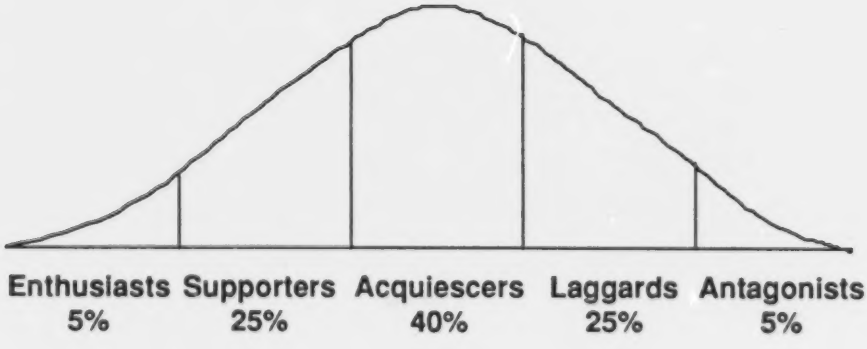
____ 1. The enthusiasts

____ 2. The supporters

____ 3. The acquiescers

____ 4. The laggards

____ 5. The antagonists



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ATTITUDES TO INNOVATION

Percentage

_____ 1. The **enthusiasts** are characterized by vigor and independence of outlook. They need adventure, enjoy making changes and taking risks, and have high aspirations. They are gregarious and are likely to have contact with other change agents and sources of information from outside the organization. The enthusiasts are likely to participate in the design or testing of the innovation.

_____ 2. The **supporters** are respected members of the organization, who have a less radical image than the enthusiasts. Like the enthusiasts, they tend to be actively involved in professional associations and inservice training. They are knowledgeable about curriculum issues and are quickly persuaded of the value of an innovation once it has been thoroughly planned, justified, and tested.

_____ 3. The **acquiescers** are solid citizens, phlegmatic and deliberate in their approach to change. While prepared to consider change, they will not initiate it. Most of their contacts are with their peers within the organization. They tend to take the line of least resistance and hence will adopt a change, at least superficially, as soon as opposition becomes onerous.

_____ 4. The **laggards** tend to have a low profile in the institution and have few contacts outside their peer group. They are characteristically skeptical about changes. They tend to be dogmatic and fatalistic and have difficulty dealing with abstractions. They are fixed in a certain way of life and will not change until the majority of colleagues have done so.

_____ 5. The **antagonists** are loners. They resist changes for deep-seated psychological or philosophical reasons. They may work actively or passively to sabotage innovations that are proposed or introduced.

On a scale of 1 (very easy) to 5 (very difficult), I believe implementation of the program will be a _____.

Activity 6: Breaking Barriers to Change

Goals:
1. To understand the nature of barriers to change
2. To learn ways to overcome barriers to change

Time: 30 minutes

Materials:
Transparency 17: "Causes of Barriers to Change"
Transparency 18: "Breaking the Barriers"
Handout 17: "Causes of Barriers to Change"
Handout 18: "Breaking the Barriers"

Instructions:

1. Ask participants to list all the possible reasons they believe people are reluctant to change their behavior. List these on a chartpack.

2. Refer to **Handout 17, Causes of Barriers to Change,** and show **Transparency 17, Causes of Barriers to Change**. Ask them if their list could be categorized into the areas listed on the transparency. Go through the list and identify the match for some of the items.

3. Using **Transparency 18, Breaking the Barriers** and **Handout 18, Breaking the Barriers**, assign partners to one of each of the causes and have them list possible solutions to the problem. Have them report when finished.

CAUSES OF BARRIERS TO CHANGE

- Absence of Motivation
- Vulnerability
- Inadequate Resources
- Lack of Clarity
- Skepticism

BREAKING THE BARRIERS

Source	Solution
Absence of Motivtion	
Vulnerability	
Inadequate Resources	
Lack of Clarity	
Skepticism	

CAUSES OF BARRIERS TO CHANGE

Absence of Motivation — People will not implement a change unless there are appropriate rewards for doing so. If the incentives attached to the implementation do not accord with the worker's own priorities, the most that can be expected is that they will adopt the appearance without the reality of change.

Vulnerability — Schools are very visible places. Particularly in times of slow economic growth, the public tends to cast a baleful eye on the schools. Community response to an innovation is consequently a major concern of many school people and will often lead them to resist a change to which public reaction is unpredictable.

Inadequate Resources — Almost any curriculum change, even one aimed at greater economy or efficiency, requires additional resources at least during the changeover period. The four kinds of resources required are time, material resources, administrative support, and expertise.

Lack of Clarity About the Change — Uncertainity about an impending change, when combined with personal insecurity, breeds rumors that can induce a state close to hysteria among those whose collaboration is essential to successful implementation. Even the consent of teachers to an innovation does not necessarily indicate that they understand the change.

Skepticism — The barriers described above all contribute to user skepticism toward specific curriculum innovations and sometimes toward curriculum change in general. Clearly the credibility of those who design or promote curriculum changes is critical as is the plausibility of the new curriculum itself.

BREAKING THE BARRIERS

SOURCE	SOLUTION
Absence of Motivation	
Vulnerability	
Inadequate Resources	
Lack of Clarity	
Skepticism	

Activity 7: Action Planning

Goal: To create a calendar for creating an implemention plan

Time: 15 minutes

Materials: Transparency 19: "Monitoring Calendar"
Transparency 20: "Action Planning Form"
Transparency 21: "Strand Goals"
Handout 19: "Monitoring Calendar"
Handout 20: "Action Planning Forms"
Handout 21: "Strand Goals"
Handout 22: "Workshop Evaluation Form"

Instructions:

1. Ask participants to list key activities of the principal that will help to manage the implementation of the curriculum. Record on a chartpack.

2. Refer participants to **Transparency 19, Monitoring Calendar** and **Handout 19, Monitoring Calendar,** and suggest that they list steps that will be taken before the school year is out.

3. Tell them **Transparency 20, Action Planning Form,** and **Handout 20, Action Planning Form,** is a calendar to plan implementation activities for next year.

4. Using **Transparency 21, Strand Goals**, review **Handout 21, Strand Goals,** and see if there are any questions about what has been done and concerns for future action.

5. Ask participants to fill out **Handout 22, Workshop Evaluation Form**.

MONITORING CALENDAR

For:_____

Indicator	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
1.												
2.												
3.												
4.												
5.												
6.												

ACTION PLANNING FORM

For: _____

Action (Steps/Procedures)	Timeline		Resources (Materials/Supplies)
	Begin	End	

STRAND GOALS

1. To develop a knowledge base of the current research and theory about curriculum alignment and implementation

2. To work with staff to implement a new or revised curriculum plan

3. To develop a plan to monitor curriculum implementation

MONITORING CALENDAR

For:_____

Indicator	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
1.												
2.												
3.												
4.												
5.												
6.												

Action Planning Form

Actions (Steps/Procedures)	Timeline Begin	Timeline End	Resources (Materials/Supplies)

STRAND GOALS

1. To develop a knowledge base of the current research and theory about curriculum alignment and implementation

2. To work with staff to implement a new or revised curriculum plan

3. To develop a plan to monitor curriculum implementation

Workshop Evaluation Form

Answer the items according to your own opinions about the work session. There are no right answers. Circle the number on the scale that corresponds to your opinion.

1. Goals of the workshop:

Poor: **1 2 3 4 5** Good:

(Unclear; diverse) *(Clear; shared by all.)*

2. Your feelings during the workshop:

Poor: **1 2 3 4 5** Good:

(I was unable to express my feelings; my feelings were ignored; my feelings were criticized.) *(I freely expressed my feelings; I felt understood; I felt support from the participants.)*

3. Organization of the workshop:

Poor: **1 2 3 4 5** Good:

(It was chaotic; very poorly done; I felt manipulated.) *(It was very well organized; it was flexible enough that we were able to influence it; all went smoothly.)*

4. Attitude about the workshop:

Poor: **1 2 3 4 5** Good:

(Boring; it was a waste of time; I don't like the way it was presented; disliked it.) *(Interesting; was helpful; liked it)*

5. Content of the workshop:

Poor: **1 2 3 4 5** Good:

(Uninstructional; did not learn much; not informative; too much process, not enough content.) *(Learned a lot; was informative; I'll be able to use the content appropriate to our needs.)*

6. **Productivity of the workshop:**

Poor: **1 2 3 4** Good: **5**

(Didn't accomplish goals; no useful ideas emerged; it got us nowhere.)

(Got a lot done; met goals; very fruitful; something will come of this session.)

7. **Leadership of the workshop:**

Poor: **1 2 3 4** Good: **5**

(Not good at all; poor.)

(Very competent.)

8. **Relevance of the workshop:**

Poor: **1 2 3 4** Good: **5**

(Does not apply at all to my project work.)

(Content is very useful to my work.)

9. **What was the most important aspect of the workshop?**

10. **What was the least important aspect of the workshop?**

11. **Comments:**

READINGS FOR TRAINERS

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2. The Various Forms of an Innovation

In Springdale, Assistant Superintendent Jenkins believed it important for all administrators to be knowledgeable about the new effective teaching program. For this reason administrators would receive advance training before teachers would be expected to use the program. She arranged to have program trainers come to the district and conduct a training session for the entire central office instructional staff and all principals in the district. Teachers received training during the summer, and began using the program in the fall.

By October, it became clear to Jenkins that many teachers were uncertain about how the program was to be used. Teachers in one elementary school complained that the new approach was too time consuming, that restructuring all their lesson plans into the new format was creating too much paperwork, and that the approach was so structured that it was stifling their creativity. The secondary coordinators reported that many high school teachers had not changed their teaching practice because it was their understanding that they could choose whether to use or not to use the program. Both the elementary and secondary coordinators reported that teachers were upset when they received a classroom visit because they thought only "weak" teachers were being targeted for visits and were expected to use the program.

In fact, several teachers had mentioned that they thought the district was penalizing the group for the shortcomings of a few by requiring everyone to

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attend the training session. Finally, Jenkins was especially distressed to hear that one principal had told his faculty not to worry about the program, that the teaching approach recommended was mostly common sense, and that good teachers were already doing most of it anyway.

SPRINGDALE'S SITUATION ILLUSTRATES THE COMMON DIFFICULTY IN communicating to all teachers clear and consistent information about the specific elements of a new program and expectations for its use. Moreover, even when clear information is shared with teachers, you, the facilitator, will often find extensive variations in how teachers implement a new program in their individual classrooms. For example, a new reading program may consist of a textbook, a set of supplementary materials, a record-keeping system, and a set of assessment tests. One teacher may use all pieces of the program in exactly the ways the inservice trainer suggested they be used. A second teacher may use the textbook but not the supplementary materials, use some of the assessment tests, and modify the record-keeping system. A third teacher may use only the textbook.

It is important for a number of reasons for you as a facilitator to be able to identify the specific ways in which teachers put a program into operation. (You can help yourself in this task, and greatly improve teachers' understanding of their tasks, by always communicating in specific operational terms what the program is to look like in classroom practice.) Once implementation is under way, you must be able to identify exactly what specific teachers are doing with the program in order to determine how best to assist them. For example, in the reading program example described above, the teacher who is using only the textbook needs a completely different type of assistance than the teacher who is using all parts of the program. You will also need detailed information about how the program is being implemented to be able to report with confidence to parents, school board members, and others. Finally, before you can consider student outcome data in an attempt to answer the question of how well a certain program works, you must be certain to what degree the program actually has been implemented. It is impossible to determine whether a program has merit if, in fact, it has been poorly or only partially implemented.

The Concept of Innovation Configurations

The concept of Innovation Configurations (Hall and Loucks 1981) emerged from our research on the change process. In our studies, we often attempted to answer the question, "How are teachers using X Program?" It soon became obvious that we needed to address a prior question: "What exactly is X program?"

Answering this question is not always as straightforward as it might seem. Often educational programs are defined in terms of their attributes, ultimate goals, or implementation requirements. One might describe a new program in general terms such as "It's easy to use," or "It's been shown to increase student achievement," or "It's fun and students enjoy it." Such statements may be helpful in some ways, but they do not help the teacher to know what to do with the program.

Describing a program in terms of its ultimate goals also offers little help with the task of implementation. For example, an art program might be intended to develop stronger relationships between teachers and the local art museum, thus encouraging students to visit the museum and bring their parents. While teachers need to be aware of the purpose of what they are doing, goals alone cannot tell them how to implement the program in the classroom. Implementation requirements are another common, but inadequate, way of describing programs. A computer program might require that teachers attend four days of training and that each classroom be equipped with ten student terminals. Again, these requirements are important, but do little to specify how the program is to be operated.

While attributes, goals, and implementation requirements are important, we believe it is critical to be able to talk about an educational program in clear, operational terms. To be truly helpful to teachers, you must be able to describe how a program will look in actual practice in the classroom. This concern guided our research and led to the development of the concept of Innovation Configurations.

Innovation Configurations (IC) represents the patterns of innovation use that result when different teachers put innovations into operation in their classrooms. In the course of our early work, we noted that individual teachers (and professors) used different parts of an innovation in different ways. When these parts were put together, a number of patterns emerged, each characterizing a different use of the innovation. We called these patterns Innovation Configurations. We developed a tool, the IC component checklist (Heck, Stiegelbauer, Hall, and Loucks 1981), for use in identifying the components, or parts, of an innovation and variations in the use of each part. This procedure has helped to answer the question "What is it?" Before we focus our attention on the checklist, however, it is important to explain some of the basic terms we use in talking about IC.

Terminology Related to IC

We use the term *component* to mean the major operational features or parts of any innovation. With instructional innovations, component de-

scriptions are usually based on materials, teacher behaviors, and student activities. A simple example would be a continuous progress math program with three components:

Component 1: Use of instructional materials
Component 2: Grouping of students
Component 3: Testing and use of test results

A language arts program might consist of the following four components:

Component 1: Use of sequenced program objectives
Component 2: Use of program materials
Component 3: Use of prescribed writing process
Component 4: Student recording of writing progress

In some programs, those components that have been determined to be essential to innovation use are designated as *critical*. Other, *related* components are not considered essential to the innovation but are recommended by the developer or facilitator as "nice to have." Designation of a component as critical or related can be done by a developer, change facilitator, user, or evaluator, preferably through a consensus-reaching process involving all these persons. Also, the designations may change during the life cycle of the innovation. For example, in the case of the continuous progress math program, the facilitator may decide that during the first year of use, only component 1 (use of program materials) is critical. In other words, teachers must use the program materials, but they may choose to use or not to use components 2 and 3. As implementation progresses and teachers use component 1 successfully, however, the other two components will be given attention and perhaps be designated as critical.

Within each component, there are a number of possible *variations* that might be observed during implementation. Variations represent the different ways in which a teacher can put a component into operation in the classroom. Note the variations in each of the three components of the continuous progress math program:

Component 1: Use of instructional materials
a. program materials only
b. program materials plus basic text
c. text only
d. teacher-made materials only

Component 2: Grouping of students
a. large, heterogeneous group
b. large, homogeneous group
c. small groups
d. completely individualized

Component 3: Testing and use of test results
a. testing once every six weeks but nothing done with test results
b. testing weekly with test results fed back to students
c. student self-testing upon completing each objective

As we have mentioned, configurations are the operational patterns of an innovation that result from implementation of different component variations. In the example above one teacher of the continuous progress math program might be teaching students as a large group using program materials plus the basic text (component 1, variation b), with testing done every six weeks but nothing done with test results (component 3, variation a). "Component 1, variation b; component 2, variation b; and component 3, variation a"; or "bba" represents this teacher's configuration. Other combinations of component variations represent other configurations. When configurations for a large number of teachers have been identified, it is possible to determine the most common ones and to identify the teachers who are using identical or similar configurations and those who are not. Again, this information is helpful in determining what types of assistance are most appropriate for specific teachers.

Another term that often comes up in relation to IC is that of *fidelity*. Often people assume that as developers of the IC concept, we must be proponents of strict fidelity, expecting teachers to use a program exactly as it was envisioned by an innovation developer. Actually, we do not take a stand on the fidelity issue; that is, we do not propose that one particular configuration of use of an innovation is what all teachers should be doing. We do, however, argue for the need for facilitators to be well informed about how teachers are using a program, whatever their use may be. It is up to the facilitators of each specific program to determine what "ideal" practice is and to determine how much variation from that ideal is acceptable.

More about IC Component Checklists

As mentioned earlier, the IC component checklist is a tool for identifying specific components or parts of an innovation and the variations that might be expected as the innovation is put into operation in

classrooms or schools. An innovation-specific checklist should be developed for each program that is to be the focus of a school improvement effort. Once you have developed the checklist, you can use it to introduce the program and communicate how the components and variations might be phased in for classroom use. Once implementation is under way, you can use the checklist to monitor program progress by interviewing teachers about their use of the program and their typical classroom practice. During or immediately after each interview, you can complete an IC component checklist for each teacher by circling the number or letter of the variation that best describes that teacher's practice within each component.

The IC component checklist can be organized into various formats. The simplest format is to prepare the checklist in list or outline form, much as the continuous progress math program checklist was organized. You can use this checklist by simply placing a check mark by the appropriate variations. Another way of organizing the checklist is a left-to-right format, with the variations of each component organized across the page. Using this format, you can place the variation judged to be the ideal or most acceptable variation of each component in the far left column, with the other variations ranging in order of descending acceptability across the page so that the least desirable variation appears in the far right column. An example of an IC component checklist organized in the left-to-right format is shown in Figure 2.1. Note the use of the vertical dotted and solid lines to indicate ideal, acceptable, and unacceptable practice. Variations to the left of the dotted line are considered ideal. Variations located between the dotted and solid vertical lines are acceptable, though not ideal, and variations to the right of the solid line are unacceptable. This format provides a graphic picture of ideal or preferred practice, valuing some variations over others.

In constru[illegible]ing a checklist, you will find that there is no set number of components that an innovation should have and no set number of variations that a component should have. The number of components will be determined by the major parts of the innovation. Most innovations will have between three and eight major parts, although some complex innovations will contain more. Variations within components should represent meaningful differences in classroom practice and yet not be so numerous as to make it difficult to identify patterns of use. Generally, you will find three to five variations, although in some cases only two variations will exist (as in the case when something is or is not present). Occasionally you may identify more than five variations within a component.

You can identify components of an innovation and variations within components by reviewing written materials on the program and inter-

Figure 2.1. Tutoring Program Checklist

*1. Materials and Equipment	(1) At least 5 different program materials are used with each child each session.	(2) At least 3 different program materials are used with each child each session.	(3) Fewer than 3 different program materials are used with each child each session.
*2. Diagnosis	(1) Children are diagnosed individually using a combination of tests and teacher judgment.	(2) Children are diagnosed individually using teacher judgment only.	(3) Children are not diagnosed individually.
3. Record-Keeping	(1) Individual record sheet is used to record diagnosis and prescription.	(2) No individual record sheets are used.	
*4. Use of Teaching Technique	(1) Continually readjusts task according to child needs; uses rewards to reinforce success.	(2) Does not continually readjust task according to child needs; does not use rewards.	
5. Grouping	(1) Children are taught in pairs.	(2) Children are not taught in pairs.	
*6. Scheduling	(1) Children are taught for 30 minutes 3 times per week. Each session is equally divided between children.	(2) Children are taught for 30 minutes 3 times per week, time for each child and each task varies slightly when necessary.	(3) Children are not taught for 30 minutes per week 3 times per week, or time for each child and each task varies markedly or is not considered.

CODE: _____ Variations to the right are unacceptable; variations to the left are acceptable.

- - - - - Variations to the left are ideal, as prescribed by the developer.

* Denotes critical components.

From: Heck, Stiegelbauer, Hall, and Loucks 1981.

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viewing the developer or some other authority on the program. From this information a preliminary checklist (often in the form of a list or outline) can be developed. This preliminary checklist can be useful in communicating what the program is and clarifying expectations for its use. If implementation is already under way when the preliminary checklist is developed, you can use it to observe and interview a small number of users to verify the initially identified components and variations and to identify others. Using the information gained through this initial data-gathering activity, you (often in collaboration with the developer/program authority) can then revise and expand the checklist to better reflect actual classroom practice. At this time, decisions are usually made about which variations are more desirable than others. The revised checklist then can be used to interview a larger number of users in different adopter sites, and further revisions can be made if necessary.

Constructing checklists is a complex task. One- and two-day workshops are available to train facilitators in developing skills in checklist construction. Our intent here is to introduce you to the concept of IC, the process of checklist development, and the application of the IC component checklist in facilitating the implementation of educational programs. For those of you who desire more in-depth information, we have included references at the end of the book.

IC and the Springdale Effective Teaching Program

When Springdale's Assistant Superintendent Jenkins began to realize that teachers felt uncertain about how the effective teaching program was to be used, she met with the instructional coordinators and later with school principals to discuss the matter. The discussions revealed that while everyone seemed to have a general understanding of the program, few people understood exactly what was expected of teachers in their use of the program in daily classroom practice. Jenkins realized that a large part of the confusion could have been avoided if she had prepared an IC component checklist at the outset. Certainly at this time it was important to develop an IC component checklist in order to communicate expectations about the program and how it was to be implemented.

Working with several of the instructional coordinators and the program trainer who had provided training for the district, Jenkins developed a preliminary checklist. In mid-November, she used the checklist to interview and observe a small sample of teachers. Using information gained from these interviews, she and the instructional coordinators made revisions, developing the checklist shown in Figure 2.2 (pp. 20–21). For the first year of implementation, they decided that compo-

nent 2: selecting and stating objectives, component 3: explaining and modeling, and component 5: providing guided practice, were most important. (Note the asterisk on the checklist by these components, indicating that they are considered critical.) When collecting IC data and doing teacher observations, facilitators would focus most attention on these components. Jenkins and her associates identified variations within each component as ideal, acceptable, or unacceptable, to use as a guideline on which to base their expectations for the first year of implementation. (Note the use of the dotted and solid vertical lines on the checklist indicating ideal, acceptable, and unacceptable variations.) In the second year of implementation they would focus more attention on the remaining three components as well as on the initial three components identified as critical during the first year.

In late November, copies of the checklist were shared with all principals to communicate the district's expectations concerning implementation of the effective teaching program. The principals decided to meet with their teachers before the Christmas break, in departmental and grade-level meetings, to discuss the program and explain the district's expectations and priorities for the first year of implementation. Prior to this meeting, principals were encouraged to collect information about teacher concerns (more about this in chapter 3). Principals then structured their meetings around the concerns and issues raised by teachers. The principals reported that teachers found the meeting helpful and asked numerous questions about how much time they would have before they would be expected to begin using the program and how they would be evaluated on its use.

In January and February, instructional coordinators scheduled a series of grade-level and subject-area meetings focused on the specific components of the program identified as critical in year 1: selecting and stating objectives, explaining and modeling, and providing guided practice. In March and April, teachers were provided opportunities to observe "veteran" teachers using the program in a neighboring school district. A schedule was worked out in order to provide release time for each teacher who wanted to participate in this observation activity; substitutes were hired to cover the classes teachers missed while observing. In May, the principals and instructional coordinators completed an IC checklist on each teacher as one part of their assessment of the new program's first year of implementation.

Display and Interpretation of IC Data

Springdale School District's use of an IC component checklist demonstrates how IC can be used to help clarify a program in the initial

Figure 2.2. Springdale Effective Teaching Program Checklist

Component 1 Using an Anticipatory Set				
(1)	(2)	(3)	(4)	(5)
Teacher typically uses an anticipatory set including the elements of review, preview, motivation, and direction	Teacher typically uses an anticipatory set that includes 1-2 appropriate elements	Teacher typically uses an anticipatory set that consists mainly of focusing attention	Teacher seldom uses an anticipatory set	Teacher never uses an anticipatory set

*Component 2 Selecting and Stating Objectives				
(1)	(2)	(3)	(4)	(5)
Teacher typically uses an objective that is relevant to students and states it in student terms	Teacher typically uses an objective that is relevant to students but seldom states it	Teacher typically states objectives, but not in student terms	Teacher seldom uses an objective	Teacher never uses an objective

*Component 3 Explaining and Modeling			
(1)	(2)	(3)	(4)
Teacher typically explains and models so that students see and understand	Teacher typically explains so that students understand but does not model	Teacher typically gives explanations that are not on the student's level	Teacher typically makes assignments with no explanation or modeling

Component 4 Checking for Understanding				
(1)	(2)	(3)	(4)	(5)
Teacher typically checks for understanding and gives immediate feedback after each section of the lesson	Teacher occasionally checks for understanding and gives feedback during the lesson	Teacher typically checks for understanding at the end of the lesson and gives feedback	Teacher occasionally checks for understanding at the end of the lesson	Teacher typically assigns work without checking for understanding

*Component 5 Providing Guided Practice			
(1)	(2)	(3)	(4)
Teacher typically checks work as students practice	Teacher occasionally checks work as students practice	Teacher does not check work as students practice	Teacher typically does not provide practice for students

*Component 6 Providing Independent Practice		
(1)	(2)	(3)
Teacher typically assigns independent practice that is appropriate for all students in length and difficulty	Teacher typically assigns independent practice that is appropriate for most students, but inappropriate for a few	Teacher typically does not provide for independent practice

———— Variations to the right are unacceptable; variations to the left are acceptable.
- - - - - - - - Variations to the left are ideal, as described by the developer.
*Denotes critical component

Note: This checklist is an integration of checklists focused on the Madalyn Hunter Effective Teaching Program developed by two North Carolina principals in the "Even Champions Have Coaches Training Program" (Draughon and Hord 1986).

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phases of implementation. IC can also be helpful in monitoring an implementation effort in progress and in identifying innovation components that may need attention. Depending on the purpose for which the data are to be used, IC data can be organized and displayed in a number of ways. Two ways of organizing data that we have found to be especially useful are by individual user and by innovation component. Let's use the example of The Science Program (TSP) to demonstrate the utility of organizing data in these two ways (Hall, Hord, Rutherford, Loucks, Huling, and Heck 1982).

TSP is a second generation science curriculum based on the science curriculums developed in the '60s and the experiences of those who have used them over the years. TSP places equal emphasis on learning the basic principles and theories of science and learning to design, conduct, and interpret scientific investigations. The program emphasizes students' working with materials, with the teacher serving in a tutorial role. The program is divided into a series of units; each unit has a theme that gradually emerges as the activities of the unit are covered. A set of standardized TSP tests have been designed to assess achievement in science content and science process. The IC component checklist for TSP is shown in Figure 2.3.

To illustrate our approaches to organizing data, we will examine hypothetical IC data collected from ten teachers in the program midway through the first year of implementation. In Figure 2.4, the data from the ten teachers are displayed by individual user. These data indicate that Teacher D appears to be the farthest along in use of the program, while Teachers E and F show the least degree of implementation. Using this information, a facilitator might ask Teacher D to assist other teachers with their use of the program and investigate why Teachers E and F are not using the program more. The facilitator then can provide personalized assistance to help them improve their use of the program. The data also indicate that all teachers except Teachers A, B, and D could benefit from assistance in how to balance the content/process emphasis of the program, while Teachers B, E, and F need assistance focused on student grouping.

Organizing and displaying IC data by individual user helps to reveal what types of assistance would be most valuable to individual users. Also, with data organized this way, it is possible to identify individuals who are using identical or highly similar configurations of the program. For example, Teachers H and J are using the exact same configuration of the program; the configurations of Teachers G and I are also identical, and are highly similar to those of Teachers H and J. Teachers E and F have configurations highly similar to each other and probably could benefit from similar types of assistance. Additional insights can be gained by

Figure 2.3. (TSP) Science Program Configuration Checklist

*Component 1. Units Taught:				
(1)	(2)	(3)	(4)	(5)
All units and most activities are taught	Most units and activities are taught	Some units are taught	A few selected activities are taught	No units or activities are taught
*Component 2. Use of Materials:				
(1)	(2)	(3)		
Students are constantly manipulating science materials	Only the teacher and selected students handle the materials most of the time	Typically, the teacher does demonstrations and the students watch		
Component 3. Student Grouping:				
(1)	(2)	(3)		
Students work individually and in small groups	Students are kept in 3–5 permanent groups	The whole class is taught as a group		
*Component 4. Process Content Emphasis:				
(1)	(2)	(3)	(4)	
Science content and science processes are emphasized equally	Science content is given major emphasis	The processes of science are given major emphasis	Memorization of facts and reading about science are emphasized	
*Component 5. Assessment:				
(1)	(2)	(3)	(4)	
All TSP assessment activities are used	Some TSP assessment activities are used	Teacher-made tests are used on a regular basis	Tests are not given regularly	

——— Variations to the right are unacceptable; variations to the left are acceptable.
..... Variations to the left are ideal, as prescribed by the developer. *Denotes critical components.

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Figure 2.4. Teachers Use of Each Component by Variation Numbers

Teacher	Components				
	1 Units Taught	2 Use of Materials	3 Student Grouping	4 Process/ Content Emphasis	5 Assessment
A	1	2	2	1	3
B	2	3	3	1	3
C	1	1	1	3	2
D	1	1	1	1	1
E	5	3	3	2	3
F	4	2	3	4	4
G	2	2	2	2	3
H	2	2	2	3	3
I	2	2	2	2	3
J	2	2	2	3	3

examining the IC data by innovation component, as shown in Figure 2.5. These data provide a more global overview of the implementation of TSP. The chart indicates that, considering the short time implementation has been under way, teacher use of the program is progressing well. Teachers are teaching many of the units and activities and, in some cases,

Figure 2.5. Percentage of Teachers Using Each Variation of Each Component

Component 1	1	2	3	4	5
Units Taught	30%	50%		10%	10%
Component 2	1		2		3
Use of Materials	20%		60%		20%
Component 3	1		2		3
Student Grouping	20%		50%		30%
Component 4	1	2	3	4	
Process/Content Emphasis	30%	30%	30%	10%	
Component 5	1	2	3	4	
Assessment	10%	10%	70%	10%	

students are being allowed to manipulate the program materials. Teachers should be congratulated for their rapid progress with these aspects of the program. However, the IC data indicate some problems with the process/content emphasis of the program. There are also variations in how teachers are grouping students. The IC data, reorganized by innovation component, can provide insight into the parts of the program on which facilitators should focus. In this case, it appears that facilitators need to focus on helping teachers begin to use TSP tests and encourage the equal emphasis of content and process. The data indicate that using inservice sessions to reemphasize the use of units, activities, and materials probably would not be the best approach. Rather, Teachers E and F, who most need this type of assistance, should receive personalized attention.

Summary

In this chapter we have discussed the concept of Innovation Configurations (IC) and its application in school improvement. IC represents the different ways individual users implement an innovation in their own settings. It is important for you as a change facilitator to be able to identify the specific ways teachers are using a program so that you can make informed decisions about how to offer support and assistance. The concept of IC is particularly useful in helping to clarify and communicate expectations related to the use of an innovation during the initial implementation phase and in monitoring implementation in progress to identify the individuals and parts of the program that require the facilitator's attention.

The IC component checklist is a tool for summarizing the descriptions of identified component parts of an innovation and the variations in how parts are put to use. In some programs some components are considered critical while others are considered related. A critical component is one that must be used if the innovation is to be considered implemented, while a related component is not considered essential to the innovation, but is recommended by the developer or facilitator. Critical components are designated on the checklist with an asterisk (*).

A variety of IC component checklist formats can be used, but organizing the checklist in a left-to-right format, with the variations of each component organized across the page, has the advantage of graphically displaying those variations valued over others. The ideal or more acceptable variation of the component is displayed in the far left column, with the other variations ranging in order of descending acceptability across the page. Ideal or most acceptable practice is placed to the left of a dotted line; a solid vertical line is used to indicate unacceptable practice, placed

to the right of the line. Variations located between the dotted and solid vertical lines are acceptable, though not ideal.

IC data can be displayed and used in a number of ways. Two particularly useful ways of organizing data are by individual user and by innovation component. When IC data are organized by individual user, it is possible to identify what types of assistance would be most valuable to specific persons. When IC data are organized by innovation component, it is possible to identify the parts of the program that are being used most successfully and those that require additional time and attention from the facilitator.

IC can be used for purposes of formative evaluation, to help pinpoint areas in need of attention, and to help facilitators decide how best to intervene. IC is also useful in summative evaluation; it addresses the question of how well a program has been implemented and thus helps evaluators decide how much confidence to place in the outcome data. If a program has been implemented to a high degree, facilitators usually can be confident that their outcome measures are a fair reflection of the program's success or failure. On the other hand, if the program has not been implemented acceptably, outcome data cannot fairly reflect a program's potential.

Innovation Configurations is a useful concept for change facilitators. Understanding how individuals are implementing a specific program provides you, the CF, with information for designing appropriate support and assistance. Used in combination with the other diagnostic dimensions of the Concerns-Based Adoption Model, Innovation Configurations can make a substantial difference in the school improvement process.

Frequently Asked Questions Related to IC

Q: *Is it better to collect IC data through observations or interviews?*

A: When collecting IC data, the more information the facilitator has the better. Ideally, the facilitator should visit with the teacher about the program several times and observe the teacher's classroom use of the program a number of times. We feel it is essential that an interview be conducted so that the facilitator can talk with the teacher about typical practice. A small number of observations is not sufficient to assess typical practice.

Q: *If an interview is used, how can you be sure the teacher will be truthful about his or her use of the program?*

A: The quality of IC data collected will depend on the rapport that the facilitator can establish with the teacher. The teacher must be made to feel that the facilitator honestly wants to be helpful, and that the visit

is for purposes of collecting information about the program, not about the individual. A good place to start is for the facilitator to explain to the teacher that he or she is interested in the teacher's experience with the new program. The facilitator should then explain that the purpose of gathering information is to pinpoint where teachers stand with the program in order to be able to decide what types of assistance teachers will find most helpful. The focus should be on the innovation/program, not the teacher.

Q: *Can you ask teachers to complete their own IC component checklist in order to save the facilitator's time?*

A: That depends. When teachers are given a copy of an IC component checklist, they usually draw conclusions about what ideal or most acceptable practice should be even if it is not marked on the instrument. In this situation, it is difficult for teachers to indicate on the checklist that their practice is less than ideal, perhaps even unacceptable. For this reason, we strongly recommend that IC data be gathered via person-to-person discussion. On the other hand, if the CF has previously established a helping relationship with teachers and they understand the supportive nature of the instrument's use, reliable data may be obtained from a written questionnaire. If IC data are to be gathered through a paper-and-pencil measure, questions should be formulated so that teachers can respond freely about their typical classroom practice without feeling the pressure of having to compare their practice to an ideal standard. The facilitator could then complete the checklist using the information the teacher has provided.

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FACTORS AFFECTING TEACHERS' AND PRINCIPALS' STAGES OF CONCERN OVER CARRYING OUT BENCHMARK TESTING

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The search for strategies to successfully carry out educational programs has been the focus of research for more than 10 years. Yet many questions remain unanswered.[1] In this paper, we discuss the relationship of selected school-environment factors to the implementation of a potentially controversial innovation—benchmark testing. We first address concerns theory and research findings on implementation. The literature review is followed by a report of an investigation of the relationship of principals' and teachers' stages of concern about benchmark testing and (1) their degree of involvement, (2) self-perceptions of knowledge about the innovation, (3) the nature of staff-development activities they were engaged in, and (4) the grade level taught or administered.

The study centered on a large, urban, central U.S. school district where a criterion-referenced benchmark-testing program was being implemented. As part of a district five-year plan, the central administration mandated centralized curriculum development, with the curriculum, learning materials, expectation levels of students, and measurements of achievement to be districtwide. The implementation of the curriculum and achievement testing occur at the building level under the direction of line superintendents.

The benchmark tests were developed by school staff and are designed to measure student achievement of citywide grade-level objectives in reading, writing, and mathematics. A purpose of the tests is to improve student achievement by identifying and providing assistance for those failing to achieve preestablished benchmarks. Standards of achievement are established for each test at the promotional gate years of kindergarten and grades 2, 5, and 7. To be promoted from grade to grade, students must attain these standards. At the high school level, students must earn 60 credits and pass the 9th-grade benchmark tests to receive a diploma.

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[1] Susan F. Loucks and Ann Lieberman, "Curriculum Implementation," in *Fundamental Curriculum Decisions*, ed. Fenwick W. English (Alexandria, Va.: Association for Supervision and Curriculum Development, 1983), pp. 126–141.

RELATED LITERATURE

The implementation theory basic to our investigation has grown out of the work of Gene Hall and other staff members formerly at the Research and Development Center for Teacher Education, University of Texas, Austin, pertaining to an individual's stage of concern.[2] Their investigations indicate that when an individual is introduced to an innovation to be carried out, that person's first concerns are *unrelated* to the innovation, followed by concerns for *self* (my adequacy, understanding) and, if these are resolved, by *task* concerns (what do I need to know, to be able to do) and, finally, when resolved, by *impact* concerns (the impact of the innovation on the learner). The purpose of our investigation was to determine whether selected implementation variables relate to a growth in teachers' and principals' stages of concern—from a concern for *self* to a concern for the *impact* on students. We must learn what factors constrain or increase the likelihood that teachers and principals will move from lower level concerns, such as concern for self (Stage 2, Personal) to a concern for the learner (Stage 4, Consequences), to the highest level of concern—seeking ways to improve the innovation being carried out or to promote a more appropriate alternative (Stage 6, Refocusing). Only as teachers and principals move to these higher levels of concern can desirable programs be carried out in schools. The seven stages of concern are defined in Table 1.

We cannot overemphasize the centrality of the teacher in carrying out an adopted program. A Rand change-agent study found teachers' commitment to an innovation important for project implementation.[3] McLaughlin and Marsh reported that a main reason many of the Great Society reform efforts failed was that the programs seriously underestimated the importance of teacher involvement in implementing programs and their training needs.[4] In a study of unsuccessful implementations, McKay and Nelson found that programs are most likely to fail without teacher training and support.[5] Difficulties with carrying out new programs have led to arguments for viewing teachers as more active agents in the innovation process.[6]

[2]Gene E. Hall, Archie A. George, and William L. Rutherford, *Measuring Stages of Concern About the Innovation: A Manual for Use of the SoC Questionnaire*, 2nd ed. (Austin: University of Texas, 1979).

[3]Paul Berman and Edward W. Pauly, *Federal Programs Supporting Educational Change, Volume II: Factors Affecting Change Agent Projects* (Santa Monica, Calif.: Rand Corporation, 1975).

[4]Milbrey W. McLaughlin and David D. Marsh, "Staff Development and School Change," *Teachers College Record* 80 (September 1978): 69–94.

[5]A. Bruce McKay and Marilyn E. Nelson, "Inservice Training for Curricular Change," *School Science and Mathematics* 80 (December 1980): 684–690.

[6]John K. Olson, "Teachers' Constructs and Curriculum Change," *Journal of Curriculum Studies* 12 (January–March 1980): 1–11; John Elliott, *Objectivity, Ideology, and Teacher Participation in Educational Research* (Norwich, England: University of East Anglia, Center for Applied Research in Education, 1975); Barry McDonald and Robert Walker, *Changing the Curriculum* (London: Open Books, 1976).

Table 1. Definitions: Stages of Concern about the Innovation

6—Refocusing: The focus is on exploring more universal benefits from the innovation, including the possibility of major changes or replacement with a more powerful alternative. The individual has definite ideas about alternatives to the proposed or existing form of the innovation.

5—Collaboration: The focus is on coordinating and cooperating with others regarding the use of the innovation.

4—Consequences: Attention focuses on the effect of the innovation on students in their immediate sphere of influence. The focus is on the relevance of the innovation for students, evaluation of student outcomes, including performance and competencies, and changes needed to increase student outcomes.

3—Management: Attention focuses on the processes and tasks of using the innovation and the best use of information and resources. Issues related to efficiency, organizing, managing, scheduling, and time demands are utmost.

2—Personal: The individual is uncertain about the demands of the innovation, his or her inadequacy to meet those demands, and his or her role in the innovation. This stage includes an analysis of the individual's role in relation to the reward structure of the organization, decision making, and consideration of potential conflicts with existing structures or personal commitment. Financial or status implications of the program for self and colleagues may also be reflected.

1—Informational: A general awareness of the innovation and interest in learning more detail about it are indicated. The person seems to be unworried about himself or herself in relation to the innovation and is interested in substantive aspects of the innovation in a selfless manner, such as general characteristics, effects, and requirements for use.

0—Awareness: Little concern about or involvement with the innovation is indicated.

NOTE: Original concept from G. E. Hall, R. C. Wallace, Jr., and W. A. Dossett, *A Developmental Conceptualization of the Adoption Process within Educational Institutions* (Austin: University of Texas, Research and Development Center for Teacher Education, 1973).

Many studies have stressed the principal's crucial role in carrying out innovations.[7] Likewise, Nicholson and Tracy found that principals' knowledge of the educational change and understanding of their role were significantly related to teachers' attitudes toward the change.[8] Some evidence also exists that principals' moral support and active participation are key elements of an effective support system during implementation.[9]

Selected aspects of staff development determine the effectiveness of the development effort in promoting successful implementation of programs.[10] These aspects include (1) context, (2) assessment and incorporation of teacher

[7]Paul Berman and Milbrey McLaughlin, *Federal Programs Supporting Educational Change, Volume VIII: Implementing and Sustaining Innovations* (Santa Monica, Calif.: Rand Corporation, 1978); Susan F. Loucks and Harold Pratt, "A Concerns-Based Approach to Curriculum Change," *Educational Leadership* 37 (December 1979): 212–215.

[8]Everett W. Nicholson and Saundra J. Tracy, "Principals' Influence on Teachers' Attitude and Implementation of Curricular Change," *Education* 103 (Fall 1982): 68–73.

[9]Seymour Sarason, *The Culture of the School and the Problem of Change*, 2nd ed. (Boston: Allyn and Bacon, 1982).

[10]Gary Griffin, "Implications of Research for Staff Development Programs," *Elementary School Journal* 83 (March 1983): 414–425.

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needs, (3) content, and (4) process. Interaction, or active participation in training sessions, allows the participants to relate personally to the knowledge, skills, and attitudes gained.[11]

Locus of decision making also affects how educational change is carried out. Top-down decisions about both staff development and the program being carried out are more likely to produce undesirable side effects and minimal recipient satisfaction.[12] Berman and McLaughlin found that neither top-down nor bottom-up but rather collaborative planning by teachers and administrators results in more effective implementation of resulting plans.[13]

Time is another critical factor relating to curriculum change. The most successful implementations provide adequate time to learn, practice, master, and apply what needs to be learned about an innovation.[14] Change must be thought of as long term, with two to three years the minimum time allowed for bringing about innovations.[15]

To successfully carry out a new innovation, teachers and administrators need a clear understanding of the change. Although this statement seems obvious, studies have identified a lack of understanding of a proposed change as a frequently perceived barrier by teachers involved in implementation.[16]

[11]Ibid.

[12]Gary D. Fenstermacher and David C. Berliner, "Determining the Value of Staff Development," *Elementary School Journal* 85 (January 1985): 281–314; Judith Schiffer, "A Framework for Staff Development," *Teachers College Record* 80 (September 1978): 4–22; Gene Hall and Susan Loucks, "Teacher Concerns as a Basis for Facilitating and Personalizing Staff Development," *Teachers College Record* 80 (September 1978): 36–53; Theodore J. Czajkowski and Jerry L. Patterson, "Curriculum Change and the School," in *Considered Action for Program Improvement*, ed. Arthur W. Foshay (Alexandria, Va.: Association for Supervision and Curriculum Development, 1980), pp. 158–175; Fred H. Wood, Steven R. Thompson, and Francis Russell, "Designing Effective Staff Development Programs," in *Staff Development/Organization Development*, ed. Barbara Dillon Peterson (Alexandria, Va.: Association for Supervision and Curriculum Development, 1981), pp. 59–91.

[13]Paul Berman and Milbrey McLaughlin, *Federal Programs Supporting Educational Change, Volume VIII: Implementing and Sustaining Innovations* (Santa Monica, Calif.: Rand Corporation, 1978).

[14]Ibid.

[15]Mary M. Dupuis and Eunice N. Askov, "An Effective Inservice Model for Content-Area Reading in Secondary Schools," *Educational Leadership* 40 (October 1982): 48–50; Michael Fullan, *Issues Involved in Conceptualizing and Evaluating the Implementation of New Follow Through Models* (paper prepared for the National Institute of Education, Teaching and Learning Division, 1983); Gene Hall, *Using the Individual and the Innovation as the Frame of Reference for Research on Change* (paper presented at the annual meeting of the Australia Association for Research in Education, Melbourne, 1979); Paul E. Heckman, Jeannie Oakes, and Kenneth A. Sirotnik, "Expanding the Concepts of School Renewal and Change," *Educational Leadership* 40 (April 1983): 26–32; Robert K. James, "Understanding Why Curriculum Innovations Succeed or Fail," *School Science and Mathematics* 81 (October 1981): 487–495.

[16]Sam D. Sieber, "Knowledge Utilization in Public Education: Incentives and Disincentives," in *Improving Schools—Using What We Know*, ed. Rolf Lehming and Michael Kane (Beverly Hills, Calif.: Sage, 1981), pp. 115–167; Neal C. Gross, Joseph E. Giacquinta, and Marilyn Bernstein, "Failure to Implement a Major Organizational Innovation," in *Managing Change in Sociological Perspectives, Strategies, and Case Studies*, ed. J. Victor Baldridge and Terrance E. Deal (Berkeley, Calif.: McCutchan, 1975), pp. 409–426; Miriam Ben-Peretz and Lya Kremer, "Curriculum Implementation and the Nature of Curriculum Materials," *Journal of Curriculum Studies* 11 (July–September 1979): 247–255; Ian I. Dow and Ruth Y. Whitehead, *New Perspectives on Curriculum Implementation—A Survey of Teacher, Principal, and Consultant/Co-ordinator Concerns* (Ontario: Ontario Public Schools, Men Teachers' Federation, 1981).

Several studies have addressed the relationship between implementation and grade or age level being taught. Consumers of this research may need to draw their own conclusions, however. Adams suggests that elementary teachers tend to be child-centered and less subject-matter-bound; others indicate that elementary teachers tend to relate positively to implementation in general.[17] Sarason, in summarizing research on secondary-level teaching, points out that secondary teachers perceive less success in implementation, and Mann, in commenting on the results of the Rand studies, indicates that secondary teachers are more independent and often more resistant to change.[18] Secondary teachers are more subject-matter-oriented, and they tend to communicate less clearly and frequently with other curriculum workers during implementation.[19]

The educational literature identifies many variables related to the successful implementation of educational programs. We have focused here on the variables we believe may explain change or the lack of change in teachers' and principals' stages of concern over benchmark testing. The variables chosen were (1) involvement in the decision to carry out benchmark testing, (2) participation in carrying out the testing program, (3) the time involved in carrying out the testing innovation, (4) the individuals' understanding of benchmark testing, (5) the nature of staff-development activities relating to the testing program, and (6) grade level taught or administered.

RESEARCH IMPLICATIONS

The results of this longitudinal study will lead us beyond our current level of understanding of both the implications of concerns theory and the

[17]Ronald D. Adams, "Teacher Development: A Look at Changes in Teacher Perceptions and Behaviors Across Time," *Journal of Teacher Education* 33 (July–August 1982): 40–43; Matilda Butler Paisley and William Paisley, *Communication for Change in Education: Linkage Programs for the '70's* (Stanford, Calif.: Stanford University, Institute for Communication Research, 1975); John A. Emrick and Susan M. Peterson, *A Synthesis of Findings Across Five Recent Studies in Educational Dissemination and Change* (San Francisco: Far West Laboratory for Educational Research, 1978); Paul Berman and Milbrey McLaughlin, *Federal Programs Supporting Educational Change, Volume VII: Factors Affecting Implementation and Continuation* (Santa Monica, Calif.: Rand Corporation, 1977); Ronald C. Havelock, *The Change Agent's Guide to Innovation in Education* (Englewood Cliffs, N.J.: Educational Technology Publications, 1973); Richard D. Kimpston and Douglas H. Anderson, "Teacher and Principal Concerns: The Implementation of Benchmark Testing," *Planning and Changing* 16 (Summer 1985): 96–104.

[18]Seymour Sarason, *The Culture of the School and the Problem of Change*, 2nd ed. (Boston: Allyn and Bacon, 1982); Dale Mann, *Making Change Happen* (New York: Teachers College Press, 1978).

[19]Ronald D. Adams, "Teacher Development: A Look at Changes in Teacher Perceptions and Behaviors Across Time," *Journal of Teacher Education* 33 (July–August 1982): 40–43; Michael Fullan and Glenn Eastabrook, *School Change Project: Interim Report of Findings* (Toronto: Ontario Institute for Studies in Education, 1973).

factors associated with the effective implementation of educational innovations, especially the potentially controversial ones. Some criticize benchmark testing, as conceived in the school district being studied, for employing tests that discriminate against minority students or those with special learning difficulties. Conversely, this testing program represents one way school districts may be more accountable in their quest to improve educational standards. For those involved in this study, despite their feelings about the testing program, some outside force cannot automatically bring about higher level concerns (e.g., a concern for learners rather than a concern for self). Holding concerns and changing concerns rest with the individual. We expect, however, that these study results will help to identify factors that constrain teachers' and principals' movement to higher level concerns. Then, a school district may intervene to help staff members focus more quickly on learner and program concerns and away from their concern for self.

RESEARCH QUESTIONS

This study attempts to answer six questions about the implementation of benchmark testing.

1. Do individual teachers' and principals' stages of concern vary over time?
2. Does grade level taught correlate with stage of concern?
3. Does role (teacher/principal) relate to stage of concern?
4. Does a relationship exist between knowledge about benchmark testing and stage of concern?
5. Does the nature of involvement in carrying out benchmark testing correlate with stage of concern?
6. Does a relationship exist between the variations and forms of staff development provided and stage of concern?

METHOD

Panel analysis was used to assess teachers' and principals' concerns about carrying out benchmark testing. A general information questionnaire and an instrument for assessing the level of concern about this innovation were administered at the beginning (Phase 1). Two years later, these same participants were surveyed again (Phase 2), using the same instruments, plus a set of questions developed by the authors assessing the nature of the staff-development program provided, how informed the respondents were about benchmark testing, and the nature of their involvement. A time lapse of two years was cited in the literature review as a minimum required for successful change.

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INSTRUMENTS

The Stages of Concern Questionnaire, developed in the Concerns-Based Adoption Model project at the Research and Development Center for Teacher

Education, University of Texas at Austin, was used to assess teachers' and principals' level of concern. The questionnaire consists of 35 statements, with 5 items targeted to each of seven stages of concern. The respondents indicate how true each of the 35 concerns about an innovation being carried out is for them by marking a number on a 0-to-6 scale. High numbers indicate high concern, low numbers indicate low concern, and 0 indicates a very low concern or completely irrelevant item.

This questionnaire has been used extensively. In one study at the University of Texas involving teachers and college professors, the internal reliabilities of the questionnaire were estimated ($N = 830$): The alpha coefficients ranged from .64 to .83, with six of the stages of concern higher than .70. In a test-retest study within a two-week period, correlations on the stages of concern scales using the Pearson r ($N = 132$) ranged from .65 to .86, again with six scales having correlations above .70. The composite representations of the feelings, preoccupation, thought, and consideration given to a particular issue or task is called *concern*. The generic name given to the issue, object, problem, or challenge, the focus of the concerns, is *innovation*.

The questionnaire developed by the authors gathered demographic data such as position and grade level taught or administered. Eight questions to assess how teachers and principals were prepared to carry out benchmark testing and eight questions on the degree of their involvement in the innovation were also included in the questionnaire.

SAMPLE

A random sample of teachers in one large midwestern school district was taken to draw a random sample of one-third of the teachers in each elementary, junior high, and senior high school in the district. All principals in the district were also included in the study. During Phase 1, there were 49 elementary, 9 junior high, and 10 senior high schools in the school district. The total sample included 526 teachers and 64 principals, with several principals serving more than one school.

In Phase 2, questionnaires were distributed to all teachers and principals selected in the initial sample. From that original sample, 392 teachers and 49 principals were still employed in the district. Because students were consolidated into fewer schools, several school buildings were closed, and teachers and principals were laid off during this two-year period, the study lost some participants between Phase 1 and Phase 2. When comparisons were made by age, gender, and grade level taught or administered, those who responded to the questionnaires in Phase 1 and Phase 2 were found to be representative of the random sample originally selected for Phase 1.

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RESULTS

In Phase 1, the response rate for classroom teachers was 46 percent; for building principals, 81 percent. In Phase 2, about 64 percent of the teachers

and 76 percent of the principals responded. Those responding to the questionnaires in Phase 1 and Phase 2 were representative of the initial random sample selected for study in Phase 1.

A primary interest in Phase 1 was to determine whether varying intensities of teachers' and principals' stages of concern about benchmark testing initially existed. The results showed (Table 2) that the majority of teachers were either at Stage 0, 1, or 2 (89.6 percent), with a few elementary teachers at Stages 3 (Management), 5 (Collaboration), and 6 (Refocusing). The majority of the principals were also at Stages 0, 1, or 2 (88.5 percent). No principals' most intense concerns were Stage 3 (Management).

From the initial analysis of the results of Phase 2 (Table 2), we determined the change in teachers' and principals' stages of concern two years after introducing benchmark testing into the district. Only 8.0 percent of the teachers remained at Stage 0 (Awareness) and Stage 1 (Informational), and 32.3 percent were at Stage 4 (Consequences). However, the largest percentage (34.7 percent) had intense Personal (Stage 2) concerns. Principals also were no longer primarily at the Awareness and Informational stages, but had Consequences (35.1 percent) or Collaboration (29.7 percent) as their most intense stage of concern.

We then compared teachers' seven stages of concern by grade level taught (Table 3). An initial multivariate analysis of variance (MANOVA) was made to control the overall alpha level within the study.[20] The Wilks lambda approxi-

Table 2. Stages of Concern of Classroom Teachers and Building Principals

Respondents	Stage of concern 0	1	2	3	4	5	6	Totals
				Phase 1				
Teachers								
Number	87	67	62	18	0	6	1	241
Percent	36.1	27.8	25.7	7.5	0	2.5	0.40	100
Principals								
Number	17	16	13	0	1	2	3	51
Percent	32.7	30.8	25	0	1.9	3.8	5.8	100
				Phase 2				
Teachers								
Number	6	14	87	32	81	20	11	251
Percent	2.4	5.6	34.7	12.7	32.3	8.0	4.4	100
Principals								
Number	0	2	5	4	13	11	2	37
Percent	0	5.4	13.5	10.8	35.1	29.7	5.4	100

[20]James H. Bray and Scott E. Maxwell, "Analyzing and Interpreting Significant MANOVA's," *Review of Educational Research* 52 (Fall 1982): 340–367.

Table 3. The Stages of Concern Group Means of Teachers by Grade Taught (MANOVA Follow-Up Results): Phase 2

Stage of concern	Grade level: Primary (N = 52)	Intermediate (N = 29)	Junior high (N = 20)	Senior high (N = 69)	F
0—Awareness	7.59[a]	9.00	9.70	10.75[a]	2.74*
1—Informational	17.33	17.66	17.50	20.16	2.08
2—Personal	22.50	21.31	23.10	22.93	0.40
3—Management	17.90	17.96	17.85	17.16	0.14
4—Consequences	20.36	23.86	22.45	22.51	2.31
5—Collaboration	14.81	16.28	12.20	16.32	2.12
6—Refocusing	15.83	16.38	12.30	14.95	1.60

Wilks lambda = .741, $F(21, 460) = 2.4$, $p < .0005$.
[a]Senior high significantly different from primary.
*$p < .05$.

mate F value was statistically significant, $F(21, 460) = 2.4$, $p < .001$. An examination of the univariate F ratios revealed a significant difference only on the Awareness (Stage 0) score. A Scheffé follow-up test found that senior high school teachers had more intense scores at this stage than primary teachers.

We also compared teachers and principals for each of the seven stages of concern. Hotelling's T-squared was statistically significant, $F(7, 192) = 5.60$, $p < .00001$. Next, univariate F ratios for each dependent variable were examined, and the discriminant weights were used for a more complete interpretation of the results.[21] Teachers had significantly more intense Stage 0 (Awareness) and Stage 2 (Personal) concerns than did principals (Table 4). Principals had significantly more intense Stage 5 (Collaboration) concerns than did teachers. These results and the discriminant weights suggest a construct measuring teachers' concern over personal role and principals' concern over coordination and cooperation with others, with teachers at a significant distance from principals.

We also questioned teachers and principals about their knowledge of benchmark testing; their responses, on a 5-point Likert scale, ranged from none to very much. Knowledge of benchmark testing thus became an independent variable in relation to stage of concern. The MANOVA resulted in a statistically significant F value for the Wilks lambda, $F(21, 546) = 5.05$, $p < .000$. All univariate tests on stage of concern were statistically significant (Table 5) at the .01 level except for Stage 5 (Collaboration). Follow-ups with post hoc Scheffé tests found a consistent pattern. Teachers and principals with the lowest level of knowledge of benchmark testing had the most intense scores

[21]Richard J. Harris, *A Primer of Multivariate Statistics*, 2nd ed. (Orlando, Florida: Academic Press, 1985).

Table 4. Follow-Up Results to Hotelling's T^2 to Measure the Difference Between Teachers and Principals According to Stage of Concern: Phase 2

Stage	Position	Number of cases	Mean	Standard deviation	*t* value
0—Awareness	Teachers	180	9.19	6.08	5.38**
	Principals	20	5.60	2.19	
1—Informational	Teachers	180	18.37	7.07	1.68
	Principals	20	15.55	7.47	
2—Personal	Teachers	180	22.37	7.10	4.10**
	Principals	20	15.50	7.08	
3—Management	Teachers	180	17.44	7.66	1.39
	Principals	20	14.90	8.45	
4—Consequences	Teachers	180	22.12	6.14	0.57
	Principals	20	21.25	8.53	
5—Collaboration	Teachers	180	15.19	6.89	−2.31*
	Principals	20	18.95	6.91	
6—Refocusing	Teachers	180	14.91	7.26	1.25
	Principals	20	12.80	7.96	

Hotelling's $T^2 = 40.455$, $F(7, 192)$, $p < .00001$
*$p < .05$ **$p < .01$

at Stages 1 and 2. Those with the most knowledge of benchmark testing had the most intense scores at Stages 3, 4, and 6.

To better understand the construct running through the seven stages of concern, we examined the discriminant function structure. Of the three possible functions, two were statistically significant at the .005 level. The first and largest function was a construct found in Stages 0 and 1 (attitude toward the innovation); the second function, from Stages 3 and 4 (organizational impact). These results agree with the results from the Scheffé tests.

The Phase 2 study results indicated similar patterns concerning the relationship between experience with benchmark testing and stage of concern.

Table 5. Group Means of Teachers and Principals by Knowledge of Benchmark Testing and Stages of Concern (MANOVA Follow-Up Results): Phase 2

	Amount of knowledge				
Stage of concern	Limited ($N = 53$)	Adequate ($N = 86$)	Much ($N = 45$)	Very much ($N = 16$)	*F*
0—Awareness	13.13	7.73	6.33	6.00	18.09*
1—Informational	20.06	18.45	14.44	17.44	5.67*
2—Personal	23.00	22.52	17.78	21.38	5.33*
3—Management	17.85	17.16	14.36	21.62	4.05*
4—Consequences	20.64	21.98	20.93	28.25	6.79*
5—Collaboration	14.09	15.81	15.87	18.38	1.72
6—Refocusing	13.33	14.97	14.22	19.19	2.76*

Wilks lambda = .601, $F(21, 546) = 5.05$, $p < .000$.
*$p < .01$.

Table 6. Group Means of Teachers' and Principals' Perceived Experience with Benchmark Testing and Stages of Concern

	Amount of experience					
Stage of concern	None ($N = 49$)	Very little ($N = 77$)	Fair amount ($N = 100$)	Much ($N = 51$)	Very much ($N = 19$)	*F*
0—Awareness	13.53	9.12	7.31	5.87	6.20	16.47*
1—Informational	20.15	18.00	16.96	14.36	16.06	4.12*
2—Personal	23.10	21.47	19.74	19.76	23.00	2.18
3—Management	16.85	16.99	15.46	16.36	17.69	0.56
4—Consequences	19.83	20.99	21.99	22.10	25.73	3.67*
5—Collaboration	15.09	13.13	15.91	17.18	18.50	3.74*
6—Refocusing	11.21	12.79	14.12	16.78	19.79	7.51*

*$p < .01$.

Teachers and principals with more experience with benchmark testing had more intense concerns at Stages 4, 5, and 6 than did those with limited experience (Table 6). Those with no experience registered strong Awareness (Stage 0) concerns.[22]

One remaining variable showed a significant relationship between movement to upper stages of concern ($p < .03$)—the nature of teachers' staff-development activities. Those who had participated in more active, as opposed to passive, staff-development activities (Table 7) made significant changes in their stages of concern from lower to upper level concerns.[23]

DISCUSSION

This study attempted to determine the variables associated with teachers' and principals' stages of concern over several years while carrying out a

Table 7. Comparison Between the Nature of Staff-Development Activities Provided Teachers and the Increase in Stages of Concern (*t* Test)

	Number of cases	Mean	Standard deviation	Standard error	*t* value	Degree of freedom	2-tail probability
Group 1 No change in stage of concern	46	2.1739	1.50	.220	−2.30	142	.023
Group 2 Change in stage of concern	98	2.7551	1.38	.139			

[22]The questionnaire gave the respondents a range of possible involvement activities to ensure greater consistency and a more accurate interpretation of responses when analyzing the data.

[23]From a list of the districts' benchmark-testing staff-development activities, the respondents identified the activities they participated in. In analyzing these data, activities were categorized as active (e.g., participating in a workshop on preparing benchmark test items) or passive (e.g., reading materials relating to benchmark testing).

potentially controversial innovation. We examined several variables with the potential to move school personnel away from personal concerns to student and program concerns. To carry out educational innovations, teachers and principals must focus their concerns at these higher levels.

Individuals with no previous experience with an innovation registered varying intensities of concern. Before introducing benchmark testing into the school district, both teachers and principals indicated varying intensities of concern about it. The results from the Stages of Concern Questionnaire revealed that both groups had concerns of lesser or greater intensity at the seven stages, and this instrument appears to be an effective tool for identifying and responding to staff concerns. The results indicate, for example, that staff inservice programs could be designed for, and staff members assigned to, programs that address their particular concerns about benchmark testing.

The period of time and nature of teacher involvement were significant factors in the movement of teachers away from unrelated and self-concerns to task and impact concerns. The results of this study relate to findings of earlier studies: The time required and the involvement of those carrying out an innovation are important factors in effective implementation. The attitudes teachers bring to an educational innovation are critical if the proposed change is to occur. If teachers are to move away from being unconcerned, or to register only personal concerns about an innovation, and focus both on the tasks required and how the innovation affects students, then teachers must be directly involved in the innovation over several years.

Grade level taught or administered, as well as the role of teacher or principal, related to that person's stage of concern, as well as the change in stage of concern. Elementary teachers had more intense *task* and *impact* concerns, and secondary teachers had more intense *unrelated* and *personal* concerns. These results suggest that elementary teachers are more student-oriented, as commonly reported in the literature, and this trait causes them to focus on concerns about the innovation being carried out and its influence on learners to a greater degree than do secondary teachers. Because a disproportionate number of elementary teachers are female, gender may be a confounding factor in these results.

The teachers' concerns were generally over their personal role in the innovation, principals' concerns were about coordination and cooperation in carrying out benchmark testing. Teachers typically carry a major share of the burden of putting an educational innovation into practice. Although teachers did make some movement to upper stages of concern, over the two years of the study they did not move strongly away from Stage 2 (Personal) concerns. Besides an obvious concern about personal responsibility for carrying out benchmark testing, other factors seem to have confounded teachers' movement away from personal concerns. Collaboration in the decision to carry out benchmark testing among staff in this district did not appear to be a virtue. Also, there was surprisingly little direct principal involvement in carrying out

the testing program. Principals' responses to the questionnaire verified that teachers, under the direction of line superintendents, have the major responsibility for carrying out testing programs. Principals' lack of involvement and responsibility not only affected teachers' concerns but also caused principals to worry about teachers' collaboration and cooperation. Collaboration among teachers and administrators in decisions about change and in efforts to carry out innovations is critical to the change process.

The nature of teachers' staff-development program and teachers' and principals' experience with and self-perception of knowledge about benchmark testing related directly to their stage of concern. The nature of the staff-development program relating to benchmark testing was an obvious factor in teachers' stage of concern and the change in their stage of concern. Teachers who had been involved in several staff-development activities requiring direct participation initially had higher stages of concern, and moved to even higher stages, than those involved in one or two passive activities. Also, teachers and principals with the least experience with and knowledge about benchmark testing had the most intense concerns at Stage 0 (Awareness) and Stage 1 (Informational). The construct *attitude toward benchmark testing* would best describe concerns relating to these two stages. The most intense concerns of both professional groups who indicated greater experience with, and knowledge about, benchmark testing were at Stages 3 (Management) and 4 (Consequences), best characterized by the construct *organizational impact.*

Therefore, the nature of teachers' staff-development program, the amount of their experience with an innovation, and their perceptions of how knowledgeable they were about the topic of a staff inservice program (e.g., benchmark testing) were interacting variables in this study. The unusually passive nature of the benchmark-testing staff-development program in this district helps to explain teachers' slow movement away from lower stage concerns between Phase 1 and Phase 2. Rather than indicating strong concerns about using benchmark testing and its effect on students, teachers in general persisted in their concern about the demands this innovation made on them, their role in the testing program, and personal commitments.

The way teachers were prepared for benchmark testing—primarily by receiving printed materials and attending faculty meetings—is inconsistent with what we know about effective staff-development programs. In planning staff-development programs, we must address the need for active participation and the need to engage in activities that are consistent with participants' needs. Also, if teachers and principals are to have positive attitudes toward an educational innovation, they must become directly involved in its implementation.

In conclusion, the findings of this study strengthen the theory on the implementation of educational innovations. Staff members who were involved in carrying out benchmark testing progressed through stages of concern about the innovation. This movement was especially pronounced for those actively involved over time, those committed to the innovation, and those with greater

knowledge about benchmark testing. Selected factors may hinder the staff's movement away from a concern for self and toward impact concerns. These factors include top-down decisions, a lack of staff-development activities that extend beyond an awareness level of the purpose and nature of the innovation, and principals' minimal involvement in helping to carry out the testing program.[4]

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[4]Despite its strengths and important findings, this study is limited. Generalizing from data gathered from a single school district is difficult, and the validity of self-reported data is always a concern. Our close contacts with numerous study participants during the investigation, and even for many years before the study, support the validity of the concerns measured by the instruments and the correlations reported.

PRINCIPAL'S INFLUENCE ON TEACHER'S ATTITUDE AND IMPLEMENTATION OF CURRICULAR CHANGE

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The present study examined the relationship between a principal's commitment to a curricular change, awareness of obstacles to the change, knowledge of the change, and clarity of role in its implementation. Two Likert type scaled questionnaires were designed to measure these four independent variables concerning the principal and the dependent variables of teacher attitude toward and implementation of the change. Twenty elementary school principals and 191 teachers took part in the study. The results of the regression analysis indicated that the principal's knowledge of the change and clarity of role was significantly related to teacher attitude while teacher participation in the change process had a major effect on attitude and implementation.

Much of the literature on the curricular change process in education suggests that the principal is in a unique position to facilitate change. Though rarely the initiator of change, he or she has access to both the structure of the organization and the life of the classroom. Writings by Gross, Giacquinta, and Bernstein (1) and Morrish (3) establish assumptions regarding the principal's position as a facilitator or blocker of an educational change. These writings deal specifically with curricular change as it is introduced and implemented in a particular school. Gross, Giacquinta, and Bernstein see the principal's own commitment to the change or innovation, role in implementation, and compatability of the organizational structure to the change to be related to implementation of the change. Morrish states that change takes place as administrators develop the skills and attitudes to implement an innovation, analyze their role in the innovation, and develop a plan for diffusion of the innovation to other levels of the organization.

Both of these sets of assumptions concerning curricular change are based on the view that a change diffuses through the organization, generally in a top to bottom manner. Such theoretical process for change established by Havelock (3) has been called the social interaction orientation to organizational change. The principal when viewed within that framework is in a key position to implement curricular change. In essence, if the change is to diffuse down to the teaching staff, passage through the principal's level of the organization is essential.

Based on this theoretical diffusion process for curricular change, the problem addressed in this study was to determine if a relationship existed between a principal's commitment to and understanding of a curricular change and his or her teachers' subsequent commitment to and implementation of that change. A number of variables have been suggested as pertinent to the principal's serving as a facilitator or blocker of the diffusion process involved in change. Besides those previously cited, studies by Griffiths (4),

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Johnson (5), Chesler, Schmuck, and Lippitt (6), and Heichberger (7) have suggested conditions relating to a principal's effectiveness in introducing change into a particular school. Also a compilation of deterrents to fully effective curricular innovation in elementary schools was done by participants in the annual Association for Supervision and Curriculum conferences from 1972 to 1977 (8). An extension of these research efforts resulted in the selection of four independent variables and two dependent variables for this study. The former included: 1) principals personal commitment to the curricular change, 2) principal's awareness of obstacles to the change, 3) principal's knowledge concerning the curricular change and 4) the principal's clarity of his or her own role in the implementation of the change. The dependent variables were 1) teacher attitude and 2) teacher implementation of the change. Data were also gathered concerning age, sex educational background, experience, and participation in the adoption of the new program in order to determine if these factors had an effect on the dependent variables which might otherwise have been attributed to the four main independent variables.

Three main assumptions were made in this study. First, it was assumed that a systemwide curricular change diffuses down through the levels of the organization. Secondly, the principal is in a key position to block or facilitate this change. The third assumption was that the curricular change process used by the school system in this study was representative of the typical process used by many other school systems in instituting a curricular change.

Procedure

The study was conducted during the 1980-81 school year in a midwestern school system with an elementary school population K-6 of approximately 8400 students. Selection criteria included the desire to find a school system in which a systemwide curricular change would take place and in which the process had been planned and carried out over a period of at least one year. The curricular change included new textbook adoption but more importantly new instructional methods and student performance evaluative techniques. Impact on both teachers and principals in such a change is apparent.

In the absence of existing instruments to gather data on the specific variables in this study, two questionnaires were developed. The *Principal's Opinionnaire* was designed to gather information on the four dependent variables while the *Teacher's Opinionnaire* gathered information on the two dependent variables and both utilized a Likert type scaling. A threefold process was used for the development of questionnaires. Items were first identified from live school situations in discussions with administrators and teachers involved in curricular change. Secondly, several special items were adapted from existing instruments. Thirdly, to establish reliability and validity, items were screened twice by two different groups of individuals with recognized expertise in the field.

Twenty elementary schools were included in the study. All twenty elementary principals were contacted personally and a random sample of 239 teachers was contacted via letters. One hundred percent of the principals and 79.1% of the teachers contacted returned the questionnaires. The target population for the study was considered to be all of the elementary school principals and teachers in the school system.

After the administration of the questionnaires, the mean score for each of the two dependent variables and the four independent variables was determined. The principals' mean score for the independent variables were then paired with the mean scores for the dependent vari-

ables of the teachers in their school. Two step-wise multiple regression analyses were performed in an attempt to predict each of the dependent variables.

Findings

Null hypotheses tested at the .05 level of significance stated that neither the four independent variables nor their two way interactions predicted or accounted for variability in the dependent variables. However, data on several other variables which were suggested by the literature were hypothesized as significant factors. The following table indicates these variables and the hypothesized direction of their relationships to the dependent variable.

Hypotheses regarding all of the principal's variables whether situational, demographic, or self perception were marked by an absence of relationships to either teacher attitude or teacher implementation.

The results of the regression analysis indicated that two of the four main independent variables were significantly related to teacher attitude — principal's clarity of role and knowledge of the change. Even more highly significant, however, was the teacher's sense of participation and power.

Of the personal characteristics, the age of both the teachers and principals was related to teacher attitude. The younger

TABLE 1
Additional Variables and Hypothesized Relationships to The Dependent Variables

Variable	Relationship to: Teacher Attitude	Teacher Implementation
[Key to relationships: Positive (+), Negative (—), None (0)]		
Teacher participation in Adopting the Change	+	+
Teacher view of Principal as instructional leader	+	+
Teacher sense of power in affecting change	+	+
Teacher age	—	—
Teacher sex	0	0
Teacher race	0	0
Teacher educational level	+	+
Teacher teaching experience	—	—
Teacher years in present position	—	—
Whether teacher served on committee recommending the change	÷	÷
If teacher has served on a curriculum committee	+	+
Grade level taught	0	0

teachers were more open to the change than their older colleagues and the older principals had a more positive influence on teacher attitude than younger ones. Table 2 indicates the R^2 and R^2 change for the variables which were found to be significant in the multiple regression analysis.

TABLE 2

R^2 and R^2 Change for Variables Significant (.05) in Teacher Attitude Regression Analysis

Variable	R^2	R^2 Change
Teacher sense of participation	.18647	.18647
Teacher age	.23049	.04402
Teacher sense of power	.27342	.04293
Principal view of self as instructional leader	.29524	.02182
Principal age	.31091	.01567
Principal experience in present position	.32480	.01389
Principal clarity of role	.35125	.02645
Principal knowledge of the change	.37473	.02348
Whether teacher served on adoption committee	.38605	.01132

None of the four main independent variables were significantly related to teacher implementation of the curricular change. In fact only two variables were statistically significant — teacher view of the principal as an instructional leader and teacher participation in the change. Table 3 indicates the R^2 and R^2 change for these two variables.

Discussion

Two major implications for the carrying out of a curricular change process result from this study. The first of these relates to the involvement of the principal. As was noted previously, the principal's clarity of role, knowledge of the change and self and teacher perception as an instructional leader were significant

TABLE 3

R^2 and R^2 Change for Variables Significant (.05) in Teacher Implementation Regression Analysis

Variable	R^2	R^2 Change
Teacher view of principal as instructional leader	.09126	.09126
Teacher participation	.15440	.06315

to teacher attitude. Thus, this study would suggest that a distinct emphasis be placed on the involvement of the principal in the change process. Frequently the principal is somewhat by-passed in a systemwide change process or receives the information regarding the change at the same point in the process as the teachers. The implication of the social interaction orientation to change and the results of this study is that the principal needs sufficient time and information regarding the change to pass through a personal adoption process and thus be ready to effectively transmit the change to teachers.

The increased participation of the principal in the change process also suggests an increased leadership role. The principal would not only handle the administrative details created by the change but through knowledge of the instructional program could assist teachers in their own personal adoption and implementation processes. The key here to the increased involvement of the principal is that the principal is prepared to be the instructional leader for the change in his or her building. He or she must demonstrate the technical skills in the knowledge and use of the change as well as human skills in helping teachers incorporate the change into their own classrooms.

The second implication relates to the teacher's role in the changing process. For both teacher attitude and implementation of the change, the teacher's sense of participation in the change was highly significant. A strong sense of participation was highly related to a positive attitude toward the curricular change and a high degree of implementation of the change. It was noted in this study that 144 of the 191 teachers responding felt that they had little or no input into the choosing of the new reading program even though an extensive two year process was carried out before the actual selection of materials. From all appearances, teacher input was extensive. The implication here is that the design of the change process may appear to be participatory utilizing a highly representative group of individuals in various committees. However, even with the most carefully planned change process, periodic evaluations need to be made to determine if the process is creating the desired human relations results as well as the completion of the basic organizational tasks. Futhermore, no matter how participtatory the change process may be, the ultimate test of the nature of the change process is in the final decision made. From written comments offered by the teachers in this study, a strong feeling is evident that though they participated in the process of change over the two year period, the final decision was not responsive to their input during that time. No judgment is made here as to which sources of input did influence the final decision. The implication is that a participatory approach to change must be participatory at all stages of the process before the individuals involved will feel a sense of input into the decision making. As obvious as this implication may appear, it is not always seriously considered in the carrying out of a curricular change.

A replication of this study is necessary before generalizing beyond the particular setting where the study occurred. However, these findings add to the previously existing research. A number of studies have suggested the great potential the principal possesses to influence acceptance or rejection of curricular change if he or she assumes the role of an instructional leader in the school. The principals in this study held the self perception of being instructional leaders, but there was an obvious lack of agreement on the part of the teachers. The potential unless the principal not only *thinks* he or she is an instructional leader but is acknowledged in that role by the teaching staff.

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